Meeting of the Central Valley Flood Protection Board
April 22, 2016

Staff Report

City of Yuba City
Feather River Parkway, Willow Island – Phase II, Sutter County

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1.0 – ITEM

Consider Central Valley Flood Protection Board (Board) approval of Permit No. 19022 (Attachment B) to complete Phase II of the Feather River Parkway project, which will expand the park area by approximately 84 acres (Attachment A).

2.0 – APPLICANT

City of Yuba City (City)

3.0 – PROJECT LOCATION

The project is located along the right (west) overbank area of the Feather River just upstream (north) of the Highway 20 Bridge connecting the City and the City of Marysville, in Sutter County (Attachment A). The proposed project area is located within the Feather River floodway west overbank area, which is bound by State Plan of Flood Control levees on the east and west sides of the river. The Feather River West Levee (FRWL) is located adjacent to the project area and protects the urban area of the City.

4.0 – PROJECT DESCRIPTION

The proposed Phase II project area encompasses approximately 84 acres of the Feather River floodway just north of the existing Phase I park, which was constructed under Permit No. 18618 issued December 2011.

The applicant is proposing to create approximately 2.5 miles of new public trails; construct ten (10) concrete anchored picnic tables and eight (8) benches, two (2) anchored bicycle racks, a 16-foot by 16-foot covered pavilion on a concrete slab, an 8-foot by 16-foot precast concrete vault toilet; stabilize approximately 100 linear-feet of eroding riverbank with the placement of approximately 200 cubic yards (CY) of rock-slope protection (RSP); excavate and re-grade (on site) approximately 4,200 (CY) of

soil and 2,100 CY of crushed aggregate base for trails; install 15 interpretive signs and garbage cans near picnic areas; and restore approximately 2 acres of degraded habitat with non-woody native plants (Attachment C). No trees or woody vegetation will be planted within the project area and all activities will take place above the U.S. Army Corps of Engineers (USACE) Ordinary High Water Mark, which applies to jurisdictional determinations for non-tidal waters under Section 404 of the Clean Water Act and under Sections 9 and 10 of the Rivers and Harbors Act of 1899, of the Feather River. The City Parks and Recreation Department will be responsible for ongoing maintenance of the proposed project.

5.0 – AUTHORITY OF THE BOARD

California Water Code § 8534, 8590 – 8610.5, and 8700 – 8710

Title 23:

- § 6 – Need for a Permit
- § 112 – Streams Regulated and Nonpermissible Work Periods
- § 116 – Borrow and Excavation Activities – Land and Channel
- § 120 – Levees
- § 121 – Erosion Control
- § 130 – Patrol Roads and Access Ramps
- § 131 – Vegetation
- § 132 – Bicycle Trails
- § 137 – Miscellaneous Encroachments

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project from all pertinent agencies are shown below:

- The USACE 33 USC 408 decision letter has not yet been received for this application. Staff anticipates receipt a letter in May indicating that the USACE District Engineer has no objections to the project, subject to conditions. Upon receipt of the letter staff will review it for conformity with the draft permit conditions and will incorporate it into the permit as Exhibit A.

- Levee District No. 1 (LD1) endorsed the project on January 15, 2015 with 13 conditions (Attachment D). Board staff has incorporated the intent of nine (9) of LD1's conditions into the permit and one (1) is already standard Board policy. However LD1 condition numbers 1, 6 and 7 were not incorporated into the draft permit conditions for the following reasons:

    - Condition 1 was not incorporated because this is a Board permit and is not required to meet any other agency standards; however applicable standards are considered as part of Board staff's recommendation.

    - Condition 6 was not incorporated because Board staff considers and analyzes a project for adverse hydraulic impacts but does not have a policy stipulating that it "shall not increase" the Water Surface Elevation (WSE) of the Peterson and Brustand, Inc. model referenced in LD1's conditions. The Board has the latitude to evaluate all potential impacts, not just WSE impacts, and make a discretionary decision based upon all impacts and benefits of a specific project.

    - Condition 7 was not incorporated because the project is an encroachment onto the State Plan of Flood Control rather than an alteration and will therefore not require an update to the Operations and Maintenance Manual.

7.0 – PROJECT ANALYSIS

7.1 – Hydraulic Summary

The existing and proposed project conditions were analyzed using one-dimensional HEC-RAS software. The USACE 1957 design flow and both 100- and 200-year storm events were used to evaluate the potential hydrologic impacts of project design.

The Feather River Parkway Phase 2 project will continue the trails and restoration efforts from the Phase1 project (Permit No. 18618 BD). There is no work within the levee prism and no trees will be planted. Phase 2 improvements include the removal of blackberry bushes, construction of pedestrian trails, planting of native grasses and shrubs as found in the restoration plans, and construction of a new bathroom. Due to the removal of blackberries and limited plantings the manning's value in the overbanks do not change as part of the improvements. Therefore the only change to the model was the inclusion of the bathroom at cross section 28.75 (Attachment E).

The cumulative impacts for both the Phase 1 and Phase 2 improvements result in a localized maximum raise in WSE of 0.02 feet and a maximum decrease of 0.01 feet. Project velocities result in a localized maximum raise in velocity of 0.06 feet per second

and maximum decrease of 0.04 feet per second. The project area will be maintained as a park, as proposed, by the City Parks and Recreation Department.

Based on review of the submitted project designs and hydraulic analysis staff has determined that the proposed project is not anticipated to create any adverse hydraulic impacts to the Sacramento River Flood Control Project (SRFCP) and SPFC facilities because there are no significant hydraulic impacts to the WSE or velocities.

7.2 – Geotechnical Summary

Based on review of the submitted project designs staff concurs with the applicant's assessment, which indicates that the proposed project will not cause any adverse geotechnical impacts to the Feather River, the SRFCP, or SPFC facilities because the proposed project is not anticipated to cause erosive velocities within the project area or channel and all activities are being conducted in accordance with Title 23.

8.0 – CEQA ANALYSIS

Board staff has prepared the following California Environmental Quality Act (CEQA) determination:

The Board, as a responsible agency under CEQA, has reviewed the Initial Study/Mitigated Negative Declaration (IS/MND) (SCH Number: 2014022014, February 2014) and Mitigation Measures for the Feather River Parkway Phase II Project prepared by the City as the lead agency.

These documents including project design may be viewed or downloaded from the Central Valley Flood Protection Board website at http://www.cvfpb.ca.gov/meetings/2016/04-22-2016.cfm under a link for this agenda item. The documents are also available for review in hard copy at the Board and City offices.

The City determined that the project would not have a significant effect on the environment and filed a Notice of Determination on April 28, 2014 with the State Clearinghouse. Staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's IS/MND and address impacts to air quality, biological and cultural

resources, geology and hydrology. The description of the mitigation measures are further described in the adopted IS/MND.

The documents and other materials which constitute the record of the Central Valley Flood Board's proceedings in this matter are in the custody of Leslie Gallagher, Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Rm. 151, Sacramento, California 95821.

9.0 – CALIFORNIA WATER CODE SECTION 8610.5 CONSIDERATIONS

- Evidence that the Board admits into its record from any party, federal, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

  The Board has considered all the evidence presented in this matter, including the application for Permit No. 19042, supporting technical documentation provided by Sutter County, as well as all evidence submitted up through the hearing on this matter.

- The best available science related to the scientific issues presented by the executive officer, legal counsel, the Department of Water Resources, or other parties that raise credible scientific issues:

  In making its findings, the applicant has used the best available science relating to the issues presented by all parties. On the important issue of hydraulic impacts, the City used the HEC-RAS one-dimensional modeling software. This model is considered as one of the best available scientific tools for the purpose of evaluating potential hydraulic impacts on water surface elevation and velocity at a sufficient level of analytical detail for the proposed project.

- Effects of the decision on the facilities of the State Plan of Flood Control (SPFC), and consistency of the proposed project with the Central Valley Flood Protection Plan (CVFPP) as adopted by Board Resolution 2012-25 on June 29, 2012:

  The proposed project is expected to result in no significant adverse hydraulic or geotechnical impacts on the facilities of the SPFC and is consistent with the CVFPP and current Title 23 standards because the project is anticipated to produce no increases in WSE, significant increases in channel velocities, or adverse geotechnical impacts on SPFC facilities. In addition, existing, proposed, and future phases of the Feather River Parkway project are included in the Feather River Regional Flood Management Plan as a baseline or future proposed work and is anticipated to be incorporated by reference into the 2017 CVFPP Update.

- Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

  The proposed project provides a multi-benefit design for area along the Feather River by providing recreational and habitat benefits in the project area while remaining flood neutral and resulting in no significant adverse hydraulic or geotechnical impacts. Therefore this project is not anticipated to create any adverse impacts to surrounding projects.

10.0 – STAFF RECOMMENDATION

Staff recommends that the Board:

Adopt: the CEQA findings;

Approve: draft Permit No. 19022, in substantially the form provided, conditioned upon receipt of a USACE 33 USC 408 decision letter indicating that the District Engineer has no objection to the project, subject to conditions; and

Direct: the Executive officer to take the necessary actions to execute the permit and file a Notice of Determination with the State Clearinghouse.

11.0 – LIST OF ATTACHMENTS

A – Project Map

B – Draft Permit No. 19022

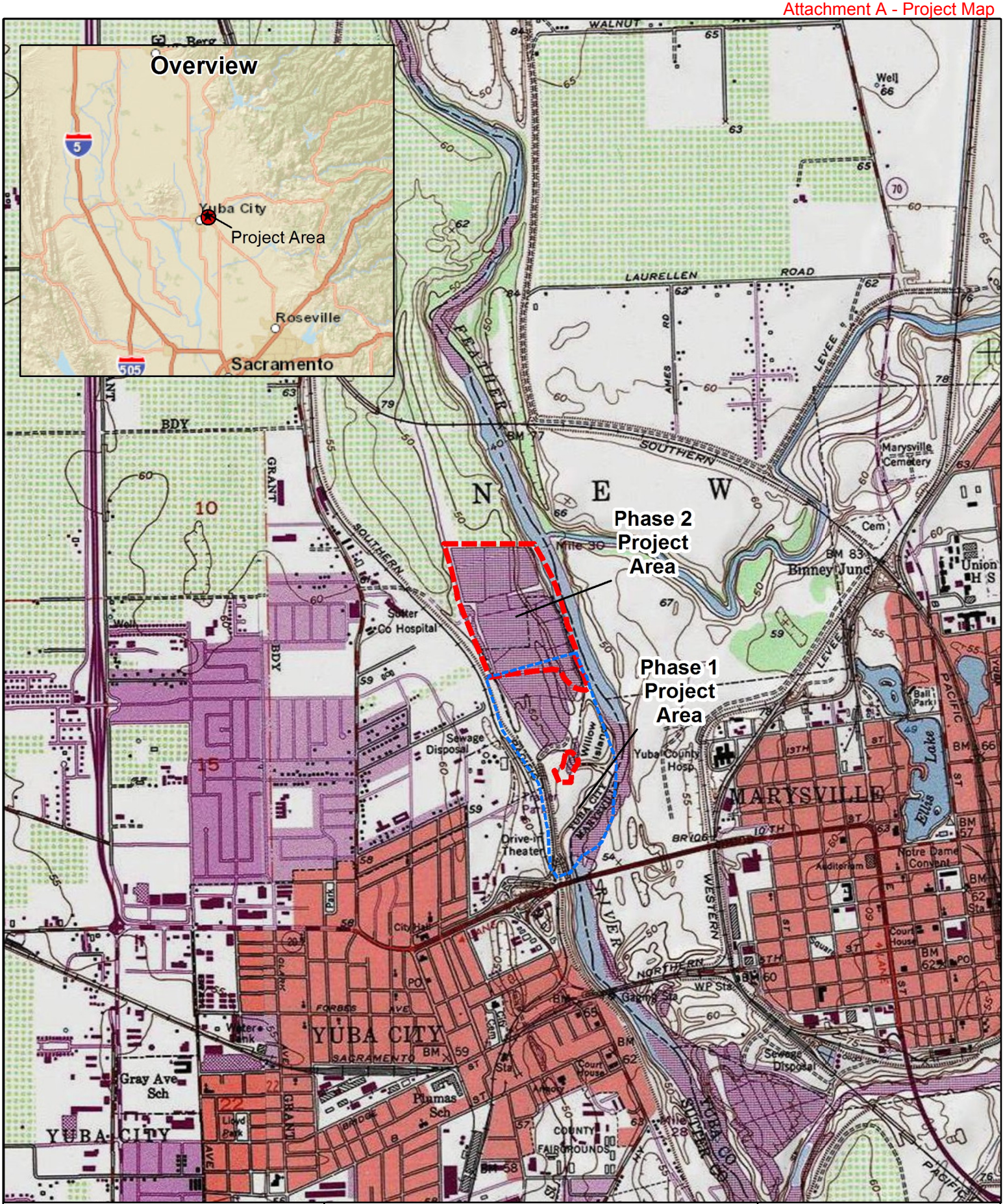
Exhibit A: USACE 33 USC 408 Decision Letter

C – Restoration Plans

D – LD 1 Endorsement Conditions

E – Hydraulic Information

Prepared By:	Nancy Moricz, PE, Senior Engineer
Environmental Review:	James Herota, Senior Environmental Scientist
Staff Report Review:	Eric Butler, PE, Supervising Engineer
	Jit Dua, Board Counsel
	Leslie Gallagher, Executive Officer



USGS 7.5 min.Topographic Quadrangle:
Yuba City
T15N R13E
121°36'38.30"W, 39° 9'11.29"N
Sutter County, California

Figure 1: Project Regional and Vicinity Map
Feather River Parkway: Phase II

0 0.25 0.5 0.75
Miles

Phase 1 Project Area
Phase 2 Project Area

1:24,000

EN2 RESOURCES, INC. Water and Energy Consulting Services

Author: Jeremy Waites Date: 12/30/2013

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 19022 BD

This Permit is issued to:

City of Yuba City
1201 Civic Center Blvd.
Yuba City, California 95933

To create approximately 2.5 miles of new public trails; construct ten (10) concrete anchored picnic tables and eight (8) benches, two (2) anchored bicycle racks, a 16-foot by 16-foot covered pavilion on a concrete slab, a 8-foot by 16-foot precast concrete vault toilet; stabilize approximately 100 linear-feet of eroding riverbank with the placement of approximately 200 CY of rock-slope protection (RSP); excavate and re-grade (on site) approximately 4,200 cubic yards (CY) of soil and 2,100 CY of crushed aggregate base for trails; install 15 interpretive signs and garbage cans near picnic areas; and restore approximately two (2) acres of degraded habitat with non-woody native plants. No trees or woody vegetation will be planted within the project area and all activities will take place above the Ordinary High Water Mark of the Feather River.

The project is located along the right (west) overbank area of the Feather River just upstream (north) of the Highway 20 Bridge connecting the cities of Yuba City and Marysville. (Section 14, T15N, R3E, MDB&M, Levee District 1 Sutter, Feather River, Sutter County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

_____
Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 19022 BD

LIABILITY AND IMDEMNIFICATION

THIRTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board (Board) and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State") and Levee District No. 1 of Sutter County (LD1), safe and harmless, of and from all claims and damages related to the Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FOURTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Board and the "State" and LD1, safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FIFTEEN: The Board, Department of Water Resources (DWR), and LD1 shall not be held liable for damages to the permitted project resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

SIXTEEN: The permittee shall defend, indemnify, and hold the Board and the "State" and LD1, safe and harmless against all damages and claims of liability of whatever nature which arise from the use of the bicycle trail.

SEVENTEEN: If the permittee does not comply with the conditions of the permit and enforcement by the Board is required, the permittee shall be responsible for bearing all costs associated with the enforcement action, including reasonable attorney's fees. Permittee acknowledges that State law allows the imposition of fines in enforcement matters.

EIGHTEEN: No construction shall begin until all necessary construction-related permits have been acquired by the permittee. The permittee agrees to incur all costs for compliance with local, State, and Federal permitting. If any conditions issued by other agencies conflict with any of the conditions of this permit, then the permittee shall resolve conflicts between any of the terms and conditions that agencies might impose under the laws and regulations it administers and enforces.

NINETEEN: The activities permitted by this permit are and forever shall be subordinate to the flowage easements held by the Sacramento and San Joaquin Drainage District (Board).

AGENCY CONDITIONS

TWENTY: The permittee shall comply with all conditions set forth in the letter from the U.S. Army Corps of Engineers (USACE) District Engineer dated April XXXX, 2016, which is attached to this permit as Exhibit A and is incorporated by reference.

TWENTY-ONE: LD1 shall be notified five (5) working days prior to any construction activities.

PRE-CONSTRUCTION

TWENTY-TWO: The permittee shall contact the Board by telephone at (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 20 working days prior to start of work may result in delay of the project.

TWENTY-THREE: Thirty (30) calendar days prior to start of any demolition and/or construction activities within the floodway, the permittee shall submit to the Chief Engineer two sets of plans, specifications and supporting geotechnical and/ or hydraulic impact analyses, for any and all temporary, in channel cofferdam(s), gravel work pad(s), work trestle(s), scaffolding, piles, and/or other appurtenances that are to remain in the floodway during the flood season from November 1 through April 15. The Board shall acknowledge receipt of this submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Board may request additional information as needed and will seek comment from the USACE and / or local maintaining agency when necessary.

The Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) calendar days.

TWENTY-FOUR: Prior to commencement of work, the permittee shall create a photo record, including associated descriptions, of the existing site conditions. The photo record shall be certified (signed and stamped) by either a licensed California land surveyor, civil engineer, or landscape architect and submitted to the Board within 30 days of beginning the project.

TWENTY-FIVE: The permittee shall provide supervision and inspection services acceptable to the Board.

CONSTRUCTION

TWENTY-SIX: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Board.

TWENTY-SEVEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Board.

TWENTY-EIGHT: All addenda or other changes made to the submitted documents by the permittee after issuance of this permit shall be submitted to the Chief Engineer for review and approval prior to incorporation into the permitted project. The submittal shall include supplemental plans, specifications, and supporting geotechnical, hydrology and hydraulics, or other technical analyses. The Board shall acknowledge receipt of the addendum or change submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Board may request additional information as needed and will seek comment from the USACE and / or the local maintaining agency when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) calendar days. Upon approval of the submitted documents the permit shall be revised, if needed, prior to construction related to the proposed changes.

TWENTY-NINE: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

THIRTY: No material stockpiles, temporary buildings, temporary access ramps and/or roads, or equipment shall remain in the floodway during the flood season from November 1 to April 15 without prior approval of the Board.

THIRTY-ONE: All debris generated by this project shall be disposed of outside the floodway.

THIRTY-TWO: The ground surface shall be kept clear of fallen trees, branches, and debris.

THIRTY-THREE: Fill material shall be placed only within the area indicated on the approved plans.

THIRTY-FOUR: Prior to placement of fill against the levee slope and within 10 feet of the levee toe, all surface vegetation shall be removed to a depth of 6 inches. Organic soil and roots larger than 1-

1/2 inches in diameter shall be removed to a depth of 3 feet.

THIRTY-FIVE: Fill placed near the Feather River west levee shall be graded to direct drainage away from the toe of the levee.

THIRTY-SIX: Backfill material for excavations shall be placed in 4- to 6-inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

THIRTY-SEVEN: Density tests by a certified soils laboratory will be required to verify compaction of backfill within the floodway and within 10 feet of the levee toe.

THIRTY-EIGHT: Erosion protection revetment/mats/blankets shall be uniformly placed and properly transitioned into the bank or adjacent erosion protection and in a manner which avoids segregation or displacement.

THIRTY-NINE: The revetment shall not contain any reinforcing steel, floatable, or objectionable material. Asphalt or other petroleum-based products may not be used as fill or erosion protection on the levee section or within the floodway.

FORTY: Aggregate base material shall be compacted to a relative compaction of not less than 95 percent per ASTM Method D1557-91, with a moisture content sufficient to obtain the required compaction.

FORTY-ONE: Above ground structures shall not be constructed within 20 feet from the toe of the levee.

FORTY-TWO: The proposed structures shall be properly anchored to prevent floatation into the floodway in the event of high water.

FORTY-THREE: The proposed structures shall not be used for human habitation.

FORTY-FOUR: The permittee acknowledges that the proposed project is located within the floodway and is subject to periodic flooding.

FORTY-FIVE: The bicycle trail shall conform to the standards contained in Section 132 of the Board's Regulations.

FORTY-SIX: The Board, DWR and LD1 retain the right to temporarily close the bicycle trail for improvement, maintenance, and emergency flood fight activities.

FORTY-SEVEN: Any additional encroachment(s) on the levee section or waterward berm, require an approved permit from the Board and shall be in compliance with the Board's regulations (Title 23 California Code of Regulations).

FORTY-EIGHT: Except with respect to the activities expressly allowed under this permit, the work area shall be restored to the condition that existed prior to start of work.

VEGETATION / ENVIRONMENTAL MITIGATION

FORTY-NINE: The permittee will be responsible for securing any necessary permits incidental to habitat manipulation and restoration and will provide any biological surveying, monitoring, and reporting needed to satisfy those permits.

FIFTY: A copy of this permit shall be included as an attachment to any Long-Term Management Plan for the permitted project area.

FIFTY-ONE: The landscaping, appurtenances, and maintenance practices shall conform to standards contained in Section 131 of the Board's Regulations.

FIFTY-TWO: The mitigation measures approved by the CEQA lead agency and the permittee are found in its Mitigation and Monitoring Reporting Program (MMRP) adopted by the CEQA lead agency. The permittee shall implement all such mitigation measures.

FIFTY-THREE: Areas where plantings are lost to erosion shall not be replanted without prior approval of the Board.

FIFTY-FOUR: All conservation easements that may be established within this project area shall be junior to flowage and maintenance easements within the project limits.

FIFTY-FIVE: No plantings, other than those shown in the approved plans or Board staff approved addenda, shall be planted within the project area without prior approval of the Board.

FIFTY-SIX: Cleared trees and brush (or pruning therefrom) shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1st to April 15th.

FIFTY-SEVEN: No wild rose, grape, blackberries, or other bushy thickets shall be propagated or otherwise allowed to grow at this site. Permittee shall promptly remove such vegetation.

POST-CONSTRUCTION

FIFTY-EIGHT: Within 120 days of completion of the project, the permittee shall submit to the Board, DWR, and LD1 a copy of as-built drawings and a certification report, stamped and signed by a licensed civil engineer registered in the State of California, certifying the work was performed and inspected in accordance with the Board permit conditions and submitted drawings and specifications.

OPERATIONS AND MAINTENANCE

FIFTY-NINE: The Board, USAACE, DWR, and LD1 or their authorized representatives shall have access to the project site at all times.

SIXTY: The permittee shall operate and maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized

representative of the Board, DWR, or LD1 or any other agency responsible for maintenance. Maintenance may include actions to preserve the integrity of the flood control system under emergency conditions. These actions will be taken at the sole expense of the permittee.

SIXTY-ONE: Maintenance of the bicycle trail shall be the responsibility of the permittee unless the permittee submits evidence of an agreement by which a public agency has assumed the responsibility of maintaining the bicycle trail. The trail shall be maintained to a level that is safe for bicycle traffic and acceptable to LD1 and DWR.

SIXTY-TWO: After each period of high water, debris that accumulates at the site shall be removed from the floodway when reasonably determined as necessary by the Board.

SIXTY-THREE: The Board may require clearing and/or pruning of trees/shrubs planted within the floodway in order to minimize obstruction to floodflows.

SIXTY-FOUR: The permittee shall be responsible for repair of any damages to the channel, banks, floodway, or any other flood control facilities due to construction, operation, or maintenance of the proposed project and repairs shall be completed in a manner consistent with Board standards.

SIXTY-FIVE: The permittee shall provide a copy of any annual reports to the Board for review and comment.

SIXTY-SIX: The permitted project shall not interfere with operation and maintenance of the Sacramento River Flood Control Project. If the permitted project is determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the project feature(s) or restore the project area to pre-project conditions, under direction of the Board or DWR. If the permittee does not comply, the Board may modify or remove the project feature(s) or restore the project area to the pre-project conditions at the permittee's expense.

SIXTY-SEVEN: In the event that levee or bank erosion injurious to the adopted plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

SIXTY-EIGHT: If the proposed project result(s) in an adverse hydraulic impact, the permittee shall provide appropriate mitigation measures, to be approved by the Board, prior to implementation of mitigation measures.

PROJECT ABANDONMENT, CHANGE IN PLAN OF FLOOD CONTROL

SIXTY-NINE: If the project land is to be sold, the transfer of interest shall not occur without written notification to the Board, and the permit with all conditions shall be transferred to the new owner and all maintenance requirements shall become the responsibility of any subsequent permittee(s).

SEVENTY: If the project or any portion thereof, is to be abandoned in the future, the permittee shall abandon the project under direction of the Board at the permittee's cost and expense.

SEVENTY-ONE: The permittee may be required, at permittee’s cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted project if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Board may remove, alter, relocate, or reconstruct the permitted project at the permittee's expense.

END OF CONDITIONS

2014

Restoration Plan for the Feather River Parkway Phase II Project

Prepared for:
City of Yuba City
1201 Civic Center Boulevard
Yuba City, CA 95993
(530) 822-4634

Prepared by:
EN2 Resources, Inc.
1024 Simon Drive
Placerville, CA 95667
(530) 626-1401

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1. INTRODUCTION

The Feather River Parkway Phase II Project (Project) in Yuba City, California will expand and improve the river front Feather River Parkway created in 2012. The City received funding for the Project from the State of California Natural Resources Agency (CNRA), through the Proposition 84 California River Parkways Grant Program, Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006. The grant is administered through the CNRA.

The proposed Project is a portion of the Feather River Parkway Strategic Plan, which was developed by the City of Yuba City, and adopted as part of the City's General Plan adopted in 2004 to utilize portions of the Feather River floodplain as a public parkway. The Feather River Parkway Strategic Plan describes a river front park that extends along the river's edge east of the City for approximately six miles, encompassing approximately 790 acres. The Project area is at the northern end of this planned parkway system, and will contain amenities that contribute to the entire parkway project objectives.

As a condition of the grant from the CNRA, the Project will restore two acres of riparian habitat in two locations, and enhance and preserve 10 acres of riparian woodlands at the Parkway site. The restored areas will be monitored annually for five years by a qualified professional and a written report of the site conditions and success of the plantings will be submitted to the City for purposes of reporting to the California Department of Fish and Wildlife (CDFW) per the terms of the Streambed Alteration Agreement (SAA) issued for the Project (CDFW 2014).

1.1. Project Setting

The Project is located in the northern Central Valley within the City of Yuba City in Sutter County. The region is characterized by flat grassland, river basins, and flood plains with ribbons of riparian vegetation along perennial watercourses. Elevations range from approximately sea level to 660 feet above mean sea level. The Project is within the Lower Sacramento River Basin, within the Lower Feather River Hydrologic Sub-basin (Lower Feather; HUC_8 18020106), within the Lower Feather River Hydrologic Area. The Feather River is listed as a perennial stream by the U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) and establishes the eastern boundary of the Project.

The Project is within the floodplain of the Feather River and is subject to periodic flooding, although large storm events are attenuated by the Oroville Dam upstream. This recurring natural disturbance has created a mixture of riparian habitats in the Project area. The majority of the Project site was formerly used as sewage treatment plant. The trail system for the Project will be built on the berms that formed the abandoned lagoons.

1.2. Project Description

The proposed Project is located within the USGS 7.5-minute Yuba City Quadrangle in the New Helvitia Land Grant (Figure 1, Site and Vicinity Map). The Project area encompasses approximately 84 acres north of the existing river front park. The Project improvements include building 2.5 miles of pedestrian and cycling trails, picnic areas, and a pavilion structure, installing a restroom at the existing parking lot, and improving access to a pond (Figure 2). The Project will also include installing interpretive signs that describe the habitat setting of the Project, wildlife species, fisheries, the restoration process, the role of the Feather River in the State history, the river's significance to the California State Water Project, and its functionality.

1.3. Restoration Goals and Objectives

This restoration plan is designed to meet and enhance habitat requirements of multiple species native to the area. The goals for this Plan are:

- Increase the number of native plant species, woody and herbaceous, in the restoration areas to improve habitat complexity.
- Control invasive, noxious weeds within the restoration areas and areas directly adjacent.
- Create a "flood-neutral" planting plan to maintain flood flow conveyance across the floodplain.
- Promote native plant and animal species and benefit wildlife. The Plan will enhance habitat for two target species in particular, the monarch butterfly and the tri-colored blackbird.

Figure 1: Location Map

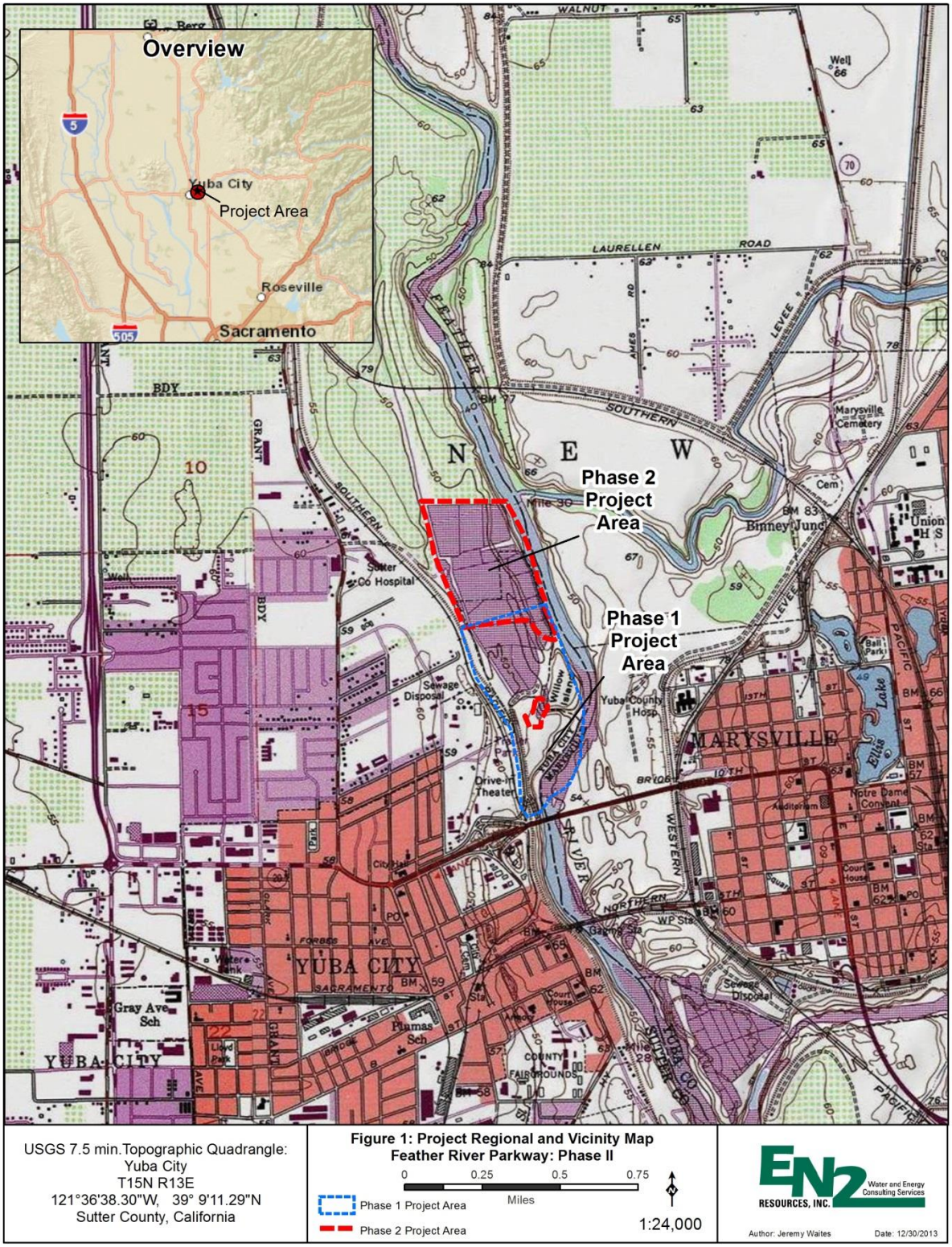
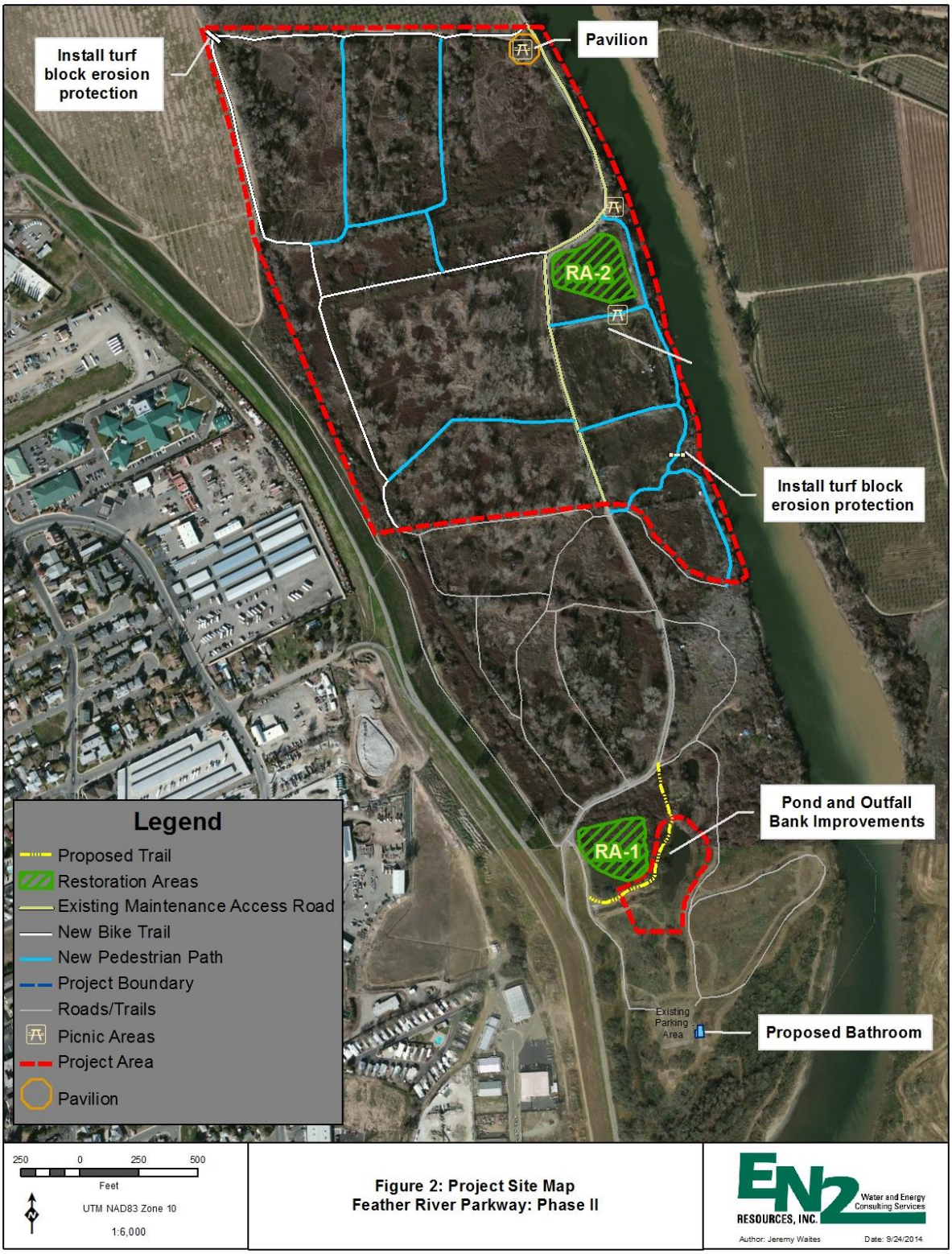


Figure 2: Project Map



2. EXISTING CONDITIONS

In September 2014, the Project area was damaged by wildfire. Damage was extensive in some areas despite firefighting efforts. Descriptions given below are based on observations and knowledge of the site before the fire. General classifications and descriptions of habitat types still apply to the Project area. However, the quality of the habitat has been reduced and the specific animals and plants that once were found on site may change as a result of the wildfire.

2.1. Habitat Classifications

The Project area is characterized by a mature overstory of cottonwood (*Populous fremontii*), valley oak (*Quercus lobata*) and very dense undergrowth consisting of wild grape (*Vitis californica*), willows (*Salix exigua, S. goodingii*), blackberry (*Rubus* armeniacus) and other species. Large mature sycamore (*Platanus racemosa*) trees are found on the higher ground as are numerous mature, multi-stemmed elderberry shrubs (*Sambucus mexicana*). The site has been invaded by a variety of noxious weeds.

The majority of the Project area is Mixed Riparian Vegetation (Holland 1986) particularly around the abandoned sewage lagoons. These areas are composed primarily of cottonwood, willow, and valley oak. Small valley oak saplings can be found throughout the open areas of willow scrubland, indicating this area is not frequently flooded for long durations. There are scattered mature valley oaks near the levee. Fires have burned much of the vegetation in the Project area and many of the elderberry shrubs are sprouting from burned stumps.

2.2. Wildlife and Plants

2.2.1. Animals

The site contains habitat for a variety of wildlife, including some special-status species as was described in the California Environmental Quality Act (CEQA) Initial Study/Mitigated Negative Declaration prepared for the Project (EN2, 2014). Abundant water and the cover provided by a great diversity of trees and shrubs of various sizes attract a variety of wildlife. In particular, avian fauna are often diverse and abundant in healthy riparian ecosystems, changing with the seasons as migratory species move in and out. Birds are good indicator species because they are conspicuous and easily observed, are often active during the day, and often highly vocal. They respond quickly to changes to their environment, like habitat restoration, which also makes them suited as an indicator of change. In addition, they are well studied, making it easy to develop a restoration plan that provides habitat elements for a suite of riparian birds that occupy different niches. California Partners in Flight (CalPIF) has developed the Riparian Bird Conservation Plan, which identifies 17 riparian bird focal species for the state (RHJV 2004).

This Plan highlights a subset of five of those bird species and has been developed to enhance habitats required by these birds. These birds have ranges that coincide with the

Project site and have habitat requirements consistent with the restoration sites. The species are listed in the table below.

Table 1. Avian Riparian Indicator Species for the Feather River Parkway

Common Name	Preferred Habitat	Restoration Plants that Enhance Habitat
Tri-colored blackbird	Marshlands with cattails, willows.	Willow Elderberry
Yellow-billed Cuckoo	Forages in dense riparian woodlands, nests in mid-canopy zone.	Narrow leaf willow Elderberry
Tree Swallow	Forages in grasslands and around open water, nests in tree cavities.	Native grasses and sedges
Common Yellowthroat	Inhabits low, dense growth found in wetland habitats. Nests in shrub areas near the ground.	Narrow leaf willow Elderberry Baccharis species
Song Sparrow	Inhabits dense thickets close to water. Nests on ground or within 4 ft. of ground.	Narrow leaf willow Elderberry

In particular, the Plan will enhance habitat for the tricolored blackbird (*Agelaius tricolor*). Found almost exclusively in California, the populations of this passerine bird have decreased dramatically in the past 70 years due in part to loss of marsh and foraging habitat (Audubon 2014). The tricolored blackbird historically nested in freshwater marshes with tules and cattails. With habitat loss, these birds have shifted to nesting in a variety of substrates including introduced blackberry thickets, or in low growing shrubs, or in grain fields. Tricolors are particulary sensitve to human disturbance, which can result in nest disturbance and are not as competitve as the red-winged blackbird for food and nesting sites (Beedy 1991). One element of the Plan creates an area that promotes habitat for tricolored blackbirds by planting native shrubs to make thickets for nesting or for refuge during foraging.

The Plan also promotes habitat and forage for the monarch butterfly. Populations of this species have dropped precipitously in the past 20 years due to loss of habitat. (Center for Biological Diversity, 2014). The Plan creates an area with native milkweed plants, the sole food source for monarch butterfly larvae and other associated species.

2.2.2. Existing Plants

The site is heavily invaded by numerous species of non-native, noxious weeds but there are a variety of native species as well. As mentioned above, there are several sub-types of riparian habitat at the site and a diversity of plant life. Some of the plants identified at the site are listed in Table 2.

Table 2. Vascular Plants Observed On-site

Plants	
***Scientific Name* - Common Name**	
Acer negundo ssp. *californicum* – California box elder	*Salix* spp. - willows

Arabis sp. - rockcress	*Sambucus mexicana* – blue elderberry
Artemisia douglasiana - mugwort	*Sorghum halepense* – Johnson grass
Baccharis salicifolius – mulefat	*Urtica dioica* – stinging nettle
Brassica rapa – field mustard	*Verbena bonariensis* – vervain
Cardamine oligosperma – bitter-cress	*Vitis californica* – California wild grape
Carduus pyncnocephalus – Italian thistle	*Xanthium strumarium* - cocklebur
Carex barbarae - Santa Barbara sedge	*Oenothera elata* ssp. *hirsutissima* – Hooker's evening primrose
Chenopodium ambrosioides – Mexican tea	*Phytolacca americana* – pokeweed
Cirsium arvense – Canada thistle, creeping thistle	*Poa annua* – annual bluegrass
Crassula tillaea – pygmy weed	*Poa* sp. Bluegrass
Daucus sp. - carrot	*Persicaria amphibium* var. *emersum*– water-smartweed
Epilobium sp. – willow herb	*Populus fremontii* – Fremont cottonwood
Erodium cicutarium – filaree	*Quercus lobata* – valley oak
Fraxinus latifolia - Oregon ash	*Rubus armeniacus* (*discolor*) – Himalayan blackberry
Galium aparine - bedstraw -	*Rumex pulcher* – fiddledock
Juncus effusus - common rush	*Salix exigua* – sandbar willow
Lolium multiflorum – Italian ryegrass	*Oenothera elata* ssp. *hirsutissima* – Hooker's evening primrose
Ludwigia peploides – water primrose	

2.3 Soils

The Natural Resource Conservation Service (NRCS) Soil Survey of Sutter County indicates there are three soil series within the study area (Figure 3). The following description is summarized from the USDA NRCS Custom Soil Resource Report (NRCS 2013). The first soil series map unit is Shanghai silt loam, frequently flooded (0-2% slopes). The second soil series map unit is Columbia fine sandy loam, frequently flooded (0-2% slopes). The third soil series map unit is Holillipah loamy sand, channeled (0-2 % slopes). The parent material for all soils is alluvium derived from mixed sources and is characteristic of floodplains. No soil types are classified as prime farmland. The first two are classified as somewhat poorly drained while the Holillipah soil is classified as somewhat excessively drained. Historically, the area was used as sewage lagoons for the City until the late 1970's when the new treatment facilities were built in southern Yuba City.

2.4 Hydrology

The site is within the floodplain of the Feather River. EN2 Resources, Inc. worked with the wetland specialist of the US Army Corps of Engineers (Corps) to map the waters and wetlands onsite in 2010 (EN2 2010) and has submitted a Preliminary Wetland Delineation for the Phase II area (EN2 2014), which is subject to verification by the Corps. Figure 4 is the 2014 Preliminary Wetland Delineation map of the site. The flows in the Feather River are controlled; however, the site is subject to periodic flooding. The hydrology of the Project area was altered by the construction of berms to create sewage lagoons, now abandoned. An intermittent drainage has been created along the west edge of the Project, between the levee and the first sewage lagoon berm. This carries flood waters south through the Project area and empties into the pond. When the pond fills, water spills out of the southern end and flows through a poorly defined channel for several hundred feet before it creates a more distinct drainage. This drainage continues south, along the levee, eventually entering the river.

The Feather River along the east edge of the Project is a navigable river within the Sacramento District of the Corps. It is a significant tributary of the Sacramento River (approximately 26 miles to the south), which connects to the Pacific Ocean via the Sacramento-San Joaquin Delta at San Francisco Bay.

The abandoned sewage lagoons, which occupy the majority of the Project area are described as artificial freshwater ponds on the NWI map; however, these areas are no longer ponds and only those on the west side of the Project area contain seasonal wetlands. The soils are variable from very sandy to loamy clay. Most of the soils observed appeared to be well drained except the heavier soils in the northwest which is consistent with the soil types mapped by NRCS. The soils and the hydrology of this area were significantly disturbed when the sewage lagoons were created and the hydrology around the lagoons is changed from historical conditions. The entire Parkway site is within a riparian area with most plants at the site adapted to moist soils and a relatively shallow water table.

Figure 3: Soils Map

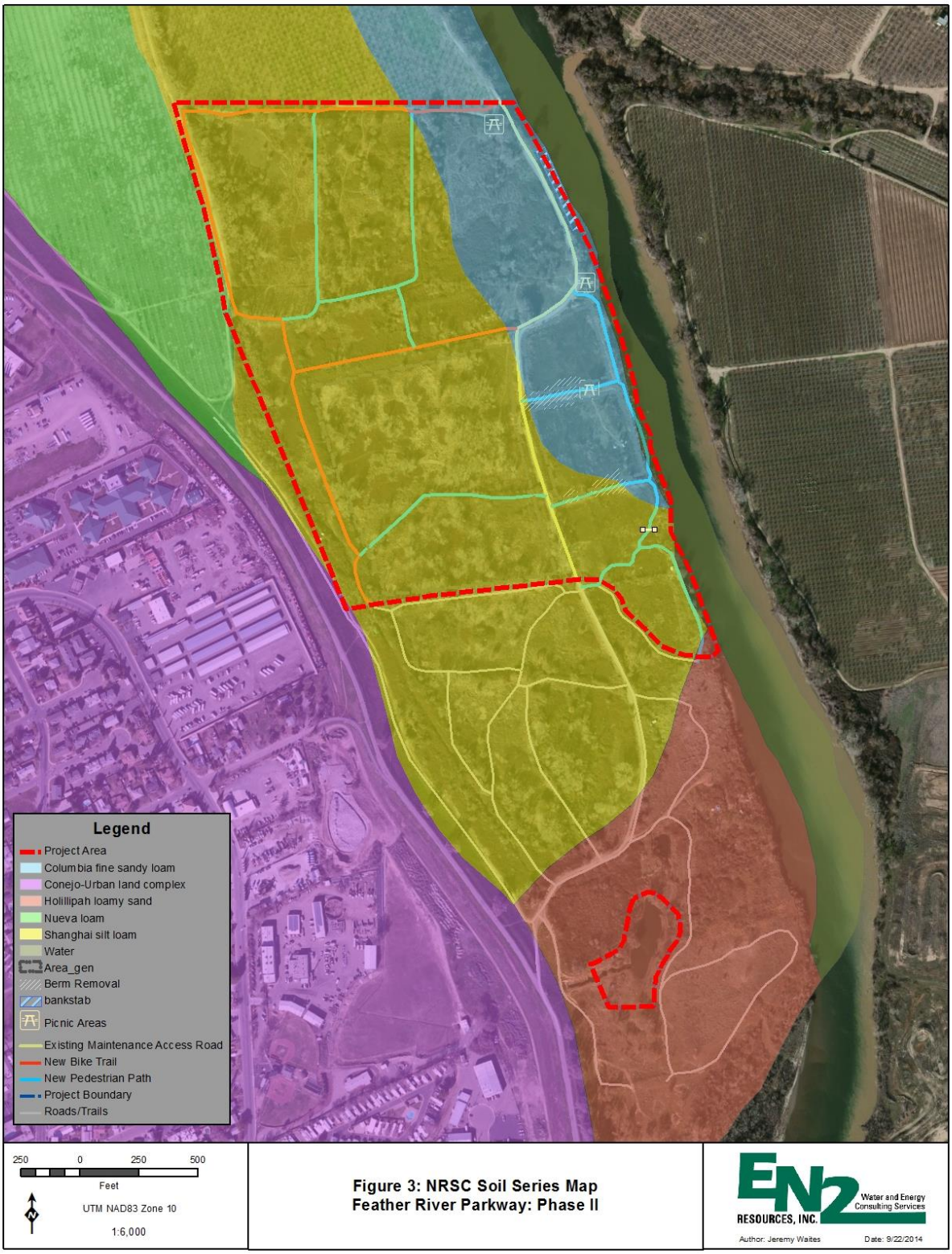
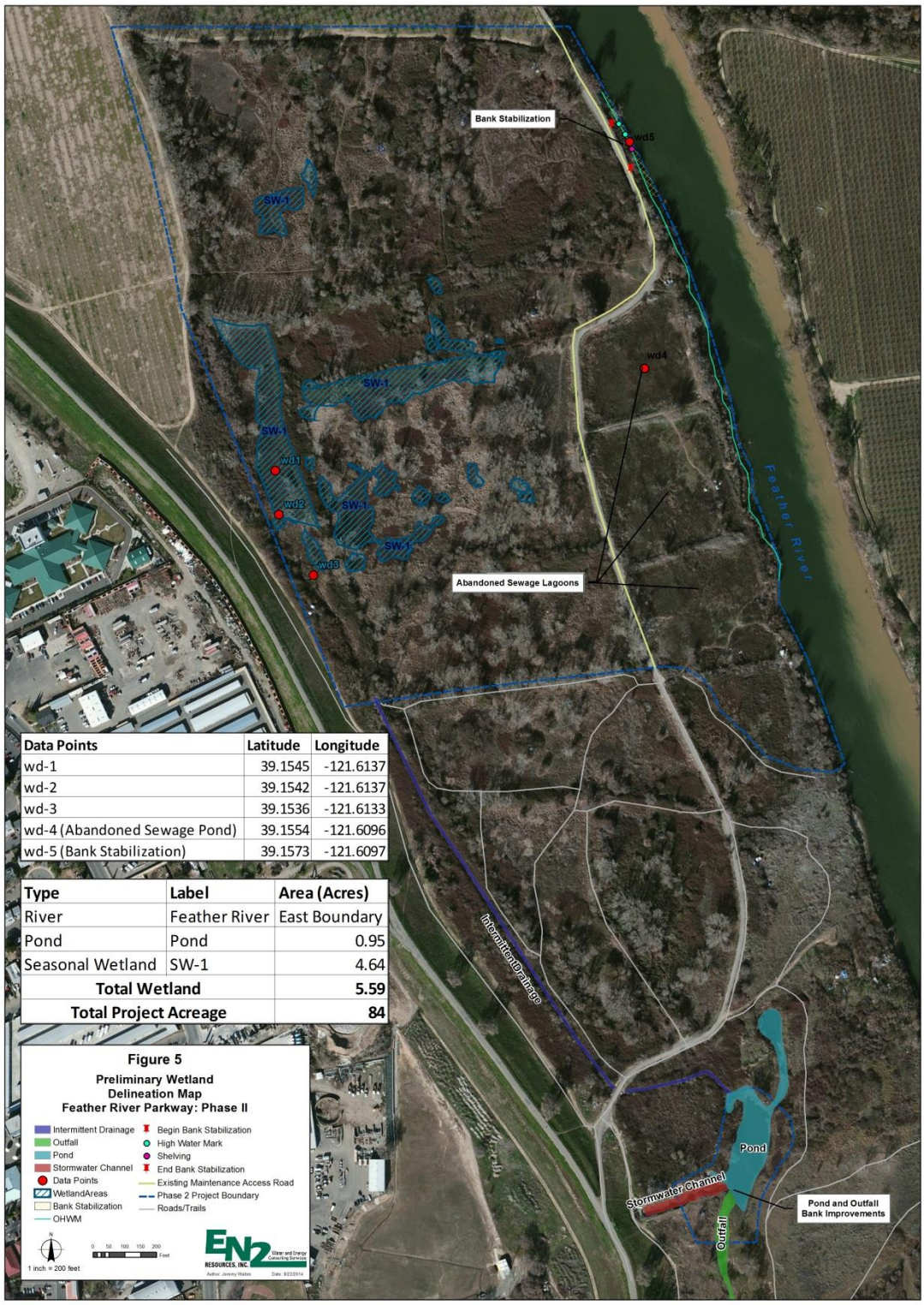


Figure 4: Preliminary Wetland Delineation Map



2.4.1. Wetlands

There are several seasonal wetlands within the overall Project boundary as indicated in the Preliminary Wetland Delineation Map as well as the Pond. Wetlands within the Project provide diversity to the overall habitat at the site, attracting a variety of wildlife that would not be there without the wetlands.

2.4.2. Waters

The ordinary high water mark (OHWM) of the Feather River forms the eastern boundary of the Project, as described in the hydrology section above and shown in Figure 4. The OHWM was determined in the field using changes in vegetation and evidence of bank scouring. The OHWM is the approximate line between established woody vegetation and recently scoured bank.

The pond in the Project area is mapped by the NWI as a freshwater pond (Palustrine, unconsolidated bottom, artificially flooded, diked/impounded) (USFWS 2009). The pond receives local stormwater runoff from the stormwater channel and the intermittent drainage. There is a narrow, shallow portion of the pond that connects to a smaller pool to the north of the main water body. As water levels drop, these two areas become separated. Multiple aerial photos from different times of the year indicate water in the pond throughout the year.

An intermittent drainage follows the line of the levee to the west and the berms of the abandoned sewage lagoons to the east. It originates approximately 1.3 miles to the north in the middle of an orchard on the river-side of the levee. The drainage continues in a fairly straight line up to a large five-foot culvert at the access road crossing (approximately 1,461 feet). On the south side of the road the drainage turns to the east and continues approximately 420 feet until it enters the Pond. This drainage typically carries flood water and excess water for brief periods following significant rain. It is mapped by the NHD as an intermittent stream. An intermittent stream usually has a regular seasonal flow pattern, and a regular flow period was not observed during site visits. Vegetation along the drainage is a mixture of riparian species, primarily willow, elderberry, and dense Himalayan blackberry. A clearly defined bed and bank are visible throughout the length of this feature. The substrate is a mixture of sand and gravel with occasional larger cobbles. The average width of this drainage is approximately 10 feet.

2.5 Disturbance

Disturbance occurs in every landscape and is an agent of change, shaping the habitat and creating a dynamic ecosystem. Understanding the agents of disturbance is important in creating an effective, long-term restoration project. Disturbance comes in many forms, both natural and anthropogenic. Whatever the cause, understanding and planning for disturbance or in some cases preventing or managing the effects of disturbance, is critical for success of the Plan.

2.5.1 Natural

Periodic flooding is the greatest agent of natural disturbance at the site. While the river flows are controlled by impoundments upstream, the site can flood periodically because it is within the Feather River levee system. Historically, flooding at the site was more frequent and widespread. The natural hydrograph would encourage establishment of native species adapted to frequent flooding, and would distribute seeds of colonizing species and fresh mineral soil on a regular basis. In more recent times, managing flood flows has contributed to the colonization of the site by undesirable, non-native species that can tolerate the less frequent flooding as well as species adapted to drier conditions (valley oak).

2.5.2 Human

The most evident disturbance by humans is the abandoned sewage lagoons in the Project area. The soils were disturbed by grading and the hydrology was permanently impacted by the formation of the berms surrounding the lagoons. Other evidence of this impact includes piles of concrete, asphalt, and other construction waste. Many of the native riparian plants were removed and animals left when the area was actively used as a sewer farm. However, since the lagoons were abandoned in the 1970's, plants and animals have begun recolonizing in the area.

A large homeless population once occupied the Project area. Impacts include randomly cut shrubs and trees and soil compaction around old campsites. Fires swept through the area on several occasions in recent history and a severe fire burned the area in 2014. While the fires are considered a natural disturbance, these were caused primarily by people. Fire is not typically a major agent of change in riparian systems and most riparian plant species are not adapted to regular fires. The fires reduced the overstory and allowed non-native Himalayan blackberry and noxious weeds to quickly colonize across the Project area.

3. RESTORATION DESIGN

The restored areas will be in two distinct locations within the Project boundary. The first area is adjacent to the pond and buffered from the new walking trail. The restoration area for the first phase of the Parkway is in close proximity and to the south. The second area will be located on the spoils pile created by the construction of the trail system and is located to the north of the Project area. A map of the Restoration areas is in Attachment 1. The total restored acreage will be approximately 2.8 acres in the two locations. Each area will have groups of shrubs with native grasses seeded in the area between shrub groups. Restoration Area 1 will also be planted with native milkweeds.

3.1 Restoration Areas

Restoration Area 1 (RA-1) is located adjacent to the pond. RA-1 will increase the total restored area in this region of the Parkway by expanding on the Phase I restoration area, located to the south, across the outfall and walking path. RA-1 is approximately 58,264 square feet (or 1.3 acres) in size. RA-1 will contain milkweed and associated plants to create habitat for the monarch butterfly, as well as willow, coffeeberry and elderberry,

which were specified for the Phase I restoration area nearby. The area outside of the specified planting areas will be over-seeded with native grasses.

Restoration Area 2 (RA-2) is located to the north of the Project area, close to the Feather River. The spoils from berm removal will be placed in this area. RA-2 is approximately 67,246 square feet (or 1.5 acres) in size and will promote habitat for the tricolored blackbird. This area was chosen for its reduced impacts from people visiting the Parkway since it is farther from the parking area for the Parkway and farther from recreational activities there. RA-2 will be planted so as to create thickets for nesting using native California wild rose and densely planted willows and other native riparian shrubs. The area outside of the specified planting areas will be over-seeded with native grasses.

3.1. Planting Material

Table 3 lists suitable native shrubs and herbaceous plants to be used at the site. Trees are not included in the list due to concerns the Central Valley Flood Control Board (CVFPB) to create a flood neutral planting plan. Lower growing shrubs and forbs are preferred to reduce the potential of hydraulic impacts in the event of a flood. The list is based on recommendations by the California Partners in Flight for suitable riparian plants in the general area (CalPIF, 2008). Willows specified for planting can be one or more of the several species listed in Table 3.

Table 3: Plant List for Restoration Areas

	Approximate Height at Maturity (feet)	**Shrub size class**
Shrubs		
Willows – Narrow leaf (*Salix exigua*) Arroyo *(S. lasiolepis*) Gooding's black (*S. goodingii*) Red (*S. laevigata*)	16	Large (L)
Mule fat -*Baccharis salcifolia*	5	Medium (M)
California wildrose - *Rosa californica*	5	Medium (M)
Common buttonbrush – *Cephalanthus occidentalis*	6	Medium (M)
Elderberry - *Sambucus mexicana*	16	Large (L)
Coffeeberry-*Frangula california ssp. tomentosa*	8	Medium (M)
Herbaceous Perennials and Grasses		
Mexican whorled milkweed – *Ascelpias fascicularis*	4	Small (S)
Indian milkweed – *A. eriocarpa*	4	Small (S)
Mugwort - *Artemisia douglasiana*	3	Small (S)
Creeping wildrye – *Leymus triticoides*	-	-
Blue wildrye – *Elymus glaucus*	-	-

3.2. Invasive Noxious Weeds

Invasive noxious weeds are often associated with disturbed areas, where natural processes have been altered. Non-native invasive weeds alter ecosystem processes, displace native species, support non-native wildlife and alter gene pools (Bossard et. al. 2000). Some weeds are more problematic than others, either through their ability to rapidly spread and alter ecosystems or because they adversely affect human land use. The California Invasive Plant Council (Cal-IPC) has rated the most significant noxious weeds in the state. Their rating is based on a system that evaluates each weed across 13 criteria divided into 3 sections: ecological impacts, invasive potential and ecological distribution. Based on this evaluation, each weed is assigned a score of High, Moderate or Limited. The definitions of these rankings and more information can be found on the website of the Cal-IPC, www.cal-ipc.org.

A variety of noxious weeds have been identified at the site. These are listed below along with their Cal-IPC rankings. The list is not exhaustive since a complete survey and inventory of weeds at the site has not been completed.

- Himalayan blackberry - *Rubus armeniacus: Cal-IPC High*
- Yellow starthistle - *Centaurea solstitilus: Cal-IPC High*
- Bull thistle - *Cirsium vulgare: Cal-IPC Moderate*
- Blessed milk thistle - *Silybum marianum: Cal-IPC Limited*
- Johnsongrass - *Sorghum halepense*
- Italian thistle - *Carduus pyncnocephalus: Cal-IPC Moderate*
- Canada thistle - *Cirsium arvense: Cal-IPC Moderate*
- Black locust - *Robinia pseudoacacia* Cal-IPC *Limited*
- Ripgut brome - *Bromus diandrus: Cal-IPC Moderate* - Widespread
- Soft brome - *Bromus hordeaceous: Cal-IPC Limited* - Widespread

The Streambed Alteration Agreement (SAA) issued by the California Department of Fish and Wildlife for Phase I of the Feather River Parkway (referred to at the time as Willow Island Parkway) (SAA #1600-2010-0067-R2) required that the City address the noxious weed problems at the site. The City has made great strides in this effort by working with volunteer crews, grazing goats in defined areas, and by seasonally mowing to reduce weeds.

Prior to the fire in 2014, some parts of the Project area were completely dominated (over 90% coverage) by invasive species. Himalayan blackberry and various thistle plants formed dense impenetrable thickets in places. The fire may have been effective in eradicating some weed species in parts of the Project area. However, noxious weed control work will be on-going for several years. Several keys to an effective integrated weed control program are:

1. Monitor weed populations and success of treatments regularly.
2. Re-seed disturbed areas with a fast growing cover crop or replant native species to out-compete weeds.
3. Allow and encourage native species to re-colonize an area after treatment.
4. Reduce the amount of herbicide used with targeted applications and/or use herbicides with selective modes of action.
5. Apply herbicide treatments at appropriate times to maximize their efficacy.

The text below describes some additional information about the control of specific weed species that occur on the site. Research has shown that certain treatments are more effective than others. Where information is available and applicable, these techniques are described below. Otherwise, conventional weed control practices can be used.

In general, extreme caution should be used when using herbicides near water. Many herbicides are toxic to aquatic life. The University of California provides a database (WaterTOX) through the UC Integrated Pest Management Program (IPM) that can be used to select herbicides for use near water and evaluate potential problems (http://www.ipm.ucdavis.edu/TOX/simplewatertox.html).

Specific IPM Measures for the Restoration Areas

Yellow starthistle: Starthistle can be controlled effectively with a combination of physical and chemical methods. Mowing or trimming should be done when 2-5% of the flowering heads are blooming and may need to be repeated later in the season. Repeated mowing and revegetation with native ground cover species provides good control.

Himalayan blackberry: This weed requires special attention. It is often near water, so herbicide applications may not be possible or need to be done with caution, using a wick or other low-drift method. It vigorously re-sprouts when cut and herbicide applications often will not completely kill the roots, which subsequently re-sprout. Consult with a PCA regarding herbicide use, but in general, applications should be made in late summer to fall when nutrient transport to the roots is occurring. If the blackberry has been mowed or cut and growth is from first-year canes, the best time to apply herbicides is late summer. If an area is physically cleared, the new growth should be allowed to reach approximately 18 inches before a follow-up herbicide application. A good mixture is glyphosate and triclopyr, each at 1% solution. The plants should be sprayed to wetness but not runoff.

Replanting an area recently treated for blackberry with a fast-growing native species that can shade it out, helping to prevent re-establishment of this species.

Complete eradication of this weed may not be possible, and a limited presence may prove to be beneficial. Native birds, such as the tricolored blackbird, use this plant for nesting as native habitat has been lost to agricultural use or other development.

Blessed milk thistle, Bull thistle: This species is best controlled with early season herbicide applications during the seedling and rosette stages of growth. Applications should be

targeted, spot sprays using a backpack type sprayer or wicking wand. Using a spreader adjunct may increase herbicide effectiveness at lower rates. Remove any plant parts that contain flowers if plants are physically removed since seeds may mature even after the plant is cut.

3.3. Erosion Control

Erosion control following construction will be necessary on any disturbed ground with exposed bare soil. CEQA mitigation measures require that an erosion control plan to be prepared as part of the Storm Water Pollution Prevention Plan (SWPPP). This will address erosion throughout the Project area. In terms of erosion control seeding, all disturbed areas need to be over-seeded with a mix of native grasses or a mix of native plants and sterile, non-native grasses. The same mixture used for the restoration area could be used, but it may be cheaper to use a mix of sterile non-native grasses and natives. Any graded slopes over 1:1 should be mulched with a combination of straw wattles and straw along with seeding.

The areas that will require reseeding include disturbed ground on either side of all trails, picnic areas, and the pavilion area. The total area requiring seeding, outside of the restoration area, will depend on how much land is cleared around the trails and other facilities.

3.4. Irrigation

The overall design of the Willow Island Recreation Area is to create a natural park area. There are no plans to bring pressurized water lines to the site. The irrigation plan for the restored areas does not include installing drip irrigation lines since supplemental water will be needed only temporarily and will be done on an as-needed basis. Watering will have to be done manually and water will be brought to the site in trucks appropriately fitted with tanks, pumps, hoses and spray booms.

3.6. Protection

Access to the Restoration areas should be limited to staff performing maintenance or monitoring the growing conditions. Rock or stone bollards should be placed to prevent unauthorized vehicle traffic. Signs should also be conspicuously placed to educate the public about the restoration work and to state that unauthorized access to these areas is prohibited.

To discourage herbivory, new plants should be protected by wire cages which prevent animals from browsing but which can accommodate hand weeding and watering.

4. IMPLEMENTATION

This section describes the specific actions that need to be taken in the restoration areas. Implementation includes site preparation, planting, watering and initial maintenance of the plantings. The contractor selected for implementing the Plan must review the Project engineering specifications for details about allowable materials, methods and necessary inspections.

Plant availability varies from year to year and he landscape contractor will need flexibility in choosing plants. Therefore, this Plan notes the numbers of plants of a certain size class, large, medium, or small, in particular groupings and gives recommendations on the plants to be used. However, the contractor should also rely on professional experience and use sound judgment when making the final plant list for installation.

4.1. Planting Methods

4.1.1. General Notes

Generally speaking, it is best to plant in late fall prior to the onset of seasonal rains. If fall planting is not an option, planting in spring once temperatures begin to rise is also acceptable. In either case, supplemental watering may be needed depending on the rainfall patterns of that year because nursery stock is adapted to regular watering and will need sufficient moisture to adapt to the local conditions.

The soil in the site area varies somewhat from sandy loam to a loamy type of soil. There is little organic matter in the soil below the top horizon. Therefore, adding soil amendments to planting areas or individual planting holes is not recommended to prevent the formation of a soil textural interface, which would impede water and air movement through the root zone. However, applying a layer of mulch around the individual plants will help retain moisture and prevent weed encroachment.

The general addition of fertilizer at planting time is not recommended; however, plug transplants may benefit from the addition of nitrogen.

Planting should be done by experienced personnel or can be done by closely-supervised volunteers.

4.1.2. Preparing the Site

As discussed in Section 3, there are numerous weed species in the restoration area. The 2014 fire made great strides in reducing the noxious weed problems. The greater the number of these plants that can be removed prior to planting, either by physical or chemical means, the greater the chance of success of the restoration. The sooner the site can be treated the better. Mowing or herbicide treatment of the entire area designated for re-seeding with the restoration seed mix is recommended (See Attachment 1, Restoration Planting Plan). Follow-up treatments may be needed as the seeds from the soil seed bank germinate or when underground rhizomes initiate growth. Care should be taken to ensure

that all existing native trees and shrubs within the restoration area are not harmed by pre-planting activities.

For best results, the site should be treated with herbicides multiple times prior to hydro-seeding. An initial herbicide treatment followed by an irrigation or natural precipitation allows new seeds to germinate. Once these seedlings have emerged, a second application can be completed, followed by reseeding and planting.

If chemical herbicides are used, the proper waiting period (defined on the herbicide label) must be observed before planting.

Timing of Planting

Timing of planting is critical. A proper balance between warm soil temperature and the onset of natural rainfall will promote plant establishment and minimize the use and expense of irrigated water. Planting before the ground becomes saturated by natural rainfall will avoid compacting the soil in the root zone. Planting times can be adjusted if provisions are made to apply adequate supplemental water until the seasonal rains begin. Bear in mind that seeds will need warmth and moisture to germinate; otherwise there is a risk of rotting after planting. Live plants also require soil warmth and moisture to promote root growth for plant establishment.

General Notes on Plant Material

Planting material from local sources is preferred. These plants are more likely to be adapted to the local conditions and have a greater chance of success compared to plant material obtained from nurseries remote to the Project area. Narrow leaf willow, mule fat, and elderberry shrubs all can be started from cuttings from plants close to the site. Cuttings are highly recommended if time and labor are not limiting factors.

Plant material should be purchased from a reputable nursery specializing in California native plants. Table 4 lists the plants and container sizes to be used in the restoration area. A nursery that propagates plants from local plant sources and operates in the same region as the Project location is preferred. Seeds should also come from a reputable supplier and should be guaranteed to be free of seeds from invasive weeds or other unwanted plants. For both live plants and seeds, it may be necessary to order well in advance of planting to ensure adequate material.

4.1.3. Live Plants

Prior to planting, the live plant material delivered to the restoration site must be spot checked to ensure viability. The planting supervisor should look for vigorous growth, bright green, turgid leaves. The plants should stay upright without support and be free of injury and pests. Plants should display a range in size and need not all be the same height. Roots must be examined on a selection of each variety/species: root tips must be white, not brown, showing that they are actively growing and container stock has been watered properly during propagation.

If time allows, it is best if the plants have a chance to "harden off" before planting. Nursery growing conditions are much different than those at the restoration site. Allowing the plants to acclimate to the local site will reduce transplant shock. Care must be taken to keep the plants properly watered during this acclimation period.

4.1.4. Planting Techniques

For shrub container plants

- Dig planting holes twice as wide as and only slightly deeper than the height of the root ball.
- Backfill a bit of soil to create a slight mound at the bottom of the hole.
- Roughen the sides of the planting hole if it seems compacted this should not be a problem at this particular site).
- Remove the plant from the container, cut off any broken, circling or diseased roots, gently spread the root ball at the bottom (for small container plants) or "butterfly" the root ball of larger plants.
- Backfill the soil into the hole, gently compacting as it is filled. Do not bury the root crown area of the plant.
- Create a basin or berm around the planting hole to hold water.
- Water the plant thoroughly.
- Install a shelter, such as a wire cage, to protect the plants from damage by small animals. There are numerous varieties available on the market. We recommend a wire mesh type that allows air circulation and light to reach the stem while preventing rodent damage.

For plugs

- Create a hole similar in size to that of the plug using a sharp stick ("dibble stick"). Place plug in hole and gently compact soil around the plug to seal it.

For seed material

- Seeding to control erosion should take place after the completion of trail installation. Surfaces for seeding need some degree of surface preparation to create a roughness to promote germination. Broadcast seeding or hydro-seeding is recommended. Covering the seeds with weed-free mulch, such as straw or fine wood chips, will promote germination and minimize seed loss.

Table 4. Recommended Restoration Plantings

Species	Revegetation type*	Size Class	Spacing (On-center, in feet)	Quantity
Shrubs				
Common button brush	T4 Container	Medium	4-6	34
California wild rose	T4 Container	Medium	4-6	50

Willows	T4 Container	Large	15-20	20
Blue Elderberry	T 4 Container	Large	15-20	10
Coffeeberry	T4 Container	Medium	4-6	7
Mulefat	T4 Container	Medium	4-6	31
Herbaceous perennials, grasses, rushes, and sedges				
Mexican whorled milkweed – *Ascelpias fascicularis* or Indian milkweed – *A. eriocarpa*	T4/Plugs/Liner	Small	6 plugs per square yard or 2 lbs./acre if using seeds	In RA-1 1,180 square yards = 7,080 plugs or use 0.4 lbs. of seed
Native Seed Mix (see below)	Seeds	Low	5 lbs./acre	8.6 lbs.

***** T4 is 4"x4"x14"; one-gallon containers can be used if T4 size are not available.

Table 5. Proposed Seed Mix and Amount of Seed for the Restoration Areas

Species	lbs./acre
Elymus glaucus (blue wildrye)	2
Leymus triticoides (creeping wildrye)	3
Total	*5*

4.1.5. Planting Areas

The Restoration Planting Plan (Attachment 1) shows the approximate location for the shrub group planting areas. The actual layout should be field fit using pin flags or other markers.

Spacing between plants should follow the guidelines given in Table 4 in this section. Planting should be done by triangulating the individual plants; avoid putting plants in a straight line. Plant species are listed in Table 6 however, some latitude in final selection should be given in the event that a particular species is in short supply. The landscape contractor should be allowed to substitute native plants that are of similar size and function. The list in the California Native Plant publication (CalPIF 2008) should be used as a reference guide for any substitution.

RA-1 contains three groups of shrubs, an area devoted to native milkweed plants, and the remaining area over-seeded with native grass mix.

Table 6. Plant Grouping Details

Planting Group	Approximate Planting Areas (in square feet)	Plant Composition
Restoration Area 1		
RA-1-1	3,500	10 California wild rose 10 Mule Fat
RA-1 -2	6,000	10 Mule Fat 5 Elderberry 5 Willow 2 Common buttonbrush
RA-1- 3	1,500	5 Elderberry
RA-1 Milkweed Area	10,610	7,080 plugs or 0.4 lbs. of seed of native milkweed
Native Grass Area	36,344 (0.8 acre)	4 lbs. native seed mix

Restoration Area 2		
RA-2-1	7,860	10 Narrow-leaf willow 10 Common buttonbrush, 4 Coffeeberry
RA-2-2	7,940	12 Common button brush 14 California wild rose, 3 Coffeeberry
RA-2-3	6,040	12 California wild rose 11 Mulefat 5 Elderberry
RA-2-4	5,070	14 California wild rose 10 Common buttonbrush
Native Grass Area	40,340 (0.92 acre)	4.6 lbs. native seed mix

5. MAINTENANCE, MONITORING AND REPORTING

After implementing a restoration plan it is critical to maintain the site, monitor the conditions, and report findings so that a record is available to evaluate the success of the Project. An annual report to CDFW is required per the terms of the Lakebed and Stream Alteration Agreement issued to the Project.

5.1. Purpose

The purpose of monitoring and reporting is to provide a record of performance and survivability of the plants. This allows managers to evaluate whether the maintenance of the plants is adequate and determine what can be done to remediate any deficiencies. Monitoring can prove useful when planning additional restoration work at the site.

5.2. Maintenance

Maintenance includes a variety of tasks, including watering, weeding, mulching, and replacing plants that fail. Other site maintenance tasks could include repairing signage or trash removal. The following sections describe typical maintenance tasks for this site.

5.2.1. General Site and Plant Maintenance

Weeding and proper watering are critical to the success of the restoration project.

Given the site constraints and discussion with City staff, hand watering the plantings on an as needed basis is the best choice. This can be accomplished with a 2-person crew using water brought to the site by truck. Studies (Alexander 2003) have shown that this method provides the best stewardship of the planting site and offers a high survival rate. While watering, the crew can also check for weeds and herbivory and ensure that the plantings receive the proper care. After installation, the area should be evaluated weekly in the next month to check that the plants have the proper amount of water. Routine site evaluation

will avoid increased costs from unnecessary water deliveries as well as costs incurred from replacing plants that fail due to lack of water.

The basin created at planting time will need to be filled and allowed to drain several times during each site visit. Do not wait for obvious signs of wilt, dry leaves or leaf drop. Check for soil moisture at 1 to 2-inch depth in the root ball. If it is dry in this zone, it is time to water. The watering berms need to be knocked down when the seasonal rains start and rebuilt again when it is time to irrigate. The areas planted with plugs should be watered with a gentle overhead spray. Make sure that plants are not damaged by dragging hoses through the planted area.

Watering is dependent on the local weather conditions. Weekly watering during the first year may be sufficient until seasonal rainfall begins. After the first year, it may be possible to decrease watering to every two weeks. The plants will gradually adapt to local conditions and may not need supplemental water after two or three years. The need for supplemental water is dictated by the natural rainfall and a strict schedule cannot be determined at this time. However, the maintenance budget should accommodate weekly watering for the first year and biweekly watering for the next two years.

As has been stated previously, weeding will help establish the restoration plants by eliminating competition for light, water and nutrients. A regular schedule of checking for weeds should be established and weed removal scheduled as appropriate. Mulching the base of the plants will greatly decrease weeding costs, and if used, should be inspected annually and refreshed as needed. The maintenance budget should accommodate hand weeding around the base of individual plants twice a year. Any unseeded areas near the defined restoration areas should be mowed before weeds in those areas develop seed heads.

The woody plants will be damaged from browsing animals, wind, and passersby. Broken branches must be cut back to a healthy shoot or stem to prevent ripping of the bark or infection. Always use clean, sharp tools for this. No additional pruning for maintenance is recommended and pruning can actually be harmful to young, establishing trees and shrubs. Plant supports or wire mesh guards need to be checked and replaced or repaired if they are not intact.

Application of fertilizers should not be necessary. If transplants appear stressed from lack of nutrients, fertilizer application should be done by hand with spot applications of a granular, balanced fertilizer (such as 15-15-15).

5.2.2. Pest control

In general, pest control refers to any of various means to prevent damage to plants from insects and vertebrates. Pest control in this section refers primarily to small rodents and other animals, which are likely to be the major pest problem. Insect pests are not often a problem in restoration plantings because native plants are resistant to many native pests and the diversity of plants and wildlife usually prevent pest species from building up to

damaging levels. Small rodents such as gophers and voles can destroy a restoration area quickly by feeding on small root systems or girdling young woody plants.

The periodic flooding of this site may make it unsuitable for pocket gophers and other small fossorial mammals. Evidence of gophers includes mounds of dirt, often in a horseshoe shape with a central plug of dirt. Monitoring should include a thorough scan of the planting area for these pests. If gophers are present and causing significant damage to plantings, then control may be warranted. Manual trapping of gophers is very effective and safe to non-target species if done correctly. Fresh gopher mounds should be carefully excavated so that 2 small trigger-type traps designed for gopher tunnels can be installed in each direction of the tunnel. These traps should be tethered to a stake in the ground to prevent predators from running off with traps. The tunnel and traps are carefully covered with dirt so that a continuous tunnel is maintained. Check and reset traps daily as necessary.

To protect plantings from voles, keep vegetation cleared from around new woody plantings to prevent voles from feeding on the stems of new plantings. Voles avoid open areas, preferring to stay in dense herbaceous vegetation. If weeds are kept clear two to three feet from around woody plants, voles are not likely to feed on the stems. Wire mesh tree guards are another effective barrier to these and other rodents.

Wire mesh tree guards also protect vulnerable young shrubs from other herbivores like rabbits and deer.

5.3. Monitoring

Several types of monitoring are required to make this restoration effective and to meet the goals and objectives outlined in Section 1.3 above.

The first type of monitoring is annual monitoring to determine the effectiveness of the restoration effort. Photographs will be taken from regular photo points and included in the report each year. The monitoring approach and rules should be established before the restoration planting begins. Monitoring of the shrubs will include survivorship counts in order to achieve the 60% survival rate required by the SAA. Failing plants should be replaced as planting conditions allow. The locations of the shrubs will be marked on an as-built map of the area in order to locate them in subsequent years. This should be summarized in a tabular format. An assessment of potential causes of plant mortality should be included with monitoring data sheets. After five years, a summary report will be submitted to CDFW which describes the condition of the restoration areas and the final survival rate of the shrubs planted.

An assessment of over-seeding success should also be made by determining percent canopy cover and numbers of invasive weed species. Assessment of the herbaceous species can be done using a defined transect line through the planting area marked on the as-built map. Inspect squares of defined size (for example, 1 square meter) on alternating sides of the transect line for percent cover and plant type. Accurate descriptions of the

location of the transect line and which areas were inspected will allow future monitors to identify the exact locations that need to be monitored in the following years.

A sample monitoring data sheet is included in Appendix A (UCANR 2009).

In addition to annual monitoring of the restoration area, the site should be regularly monitored during the year by maintenance staff to ensure the maintenance items listed in Section 5.2 are effectively implemented. This is an informal type of monitoring and does not require that a formal report be written; however, keeping accurate records of regular maintenance visits is strongly encouraged. Things to note include weed presence, weed control effectiveness, presence of invasive weeds listed above, pest incidence (gophers and voles) and control efforts, need for irrigation and amount irrigated, and any other useful observations. Having this material available for annual reporting would be highly valuable in determining corrective actions.

The final type of monitoring includes evaluating the entire Project area for invasive, noxious weeds. This monitoring should be completed annually after a baseline assessment is completed. The baseline survey is necessary to understand the extent and type of weeds present at the site. This should include a map showing where the different weeds are concentrated. For example, some areas may contain large areas of dense blackberry bramble, other areas may be dominated by Johnsongrass, and still others may have a mix of more upland-type species (thistles, mustard, etc.).

A priority list of noxious weed occurrences can be made so that future weed control and restoration can be directed at high priority sites with approximate known acreages. Annual monitoring can assess the extent and spread of infestations as well as the success of treatments.

5.4. Reporting

An annual report should be prepared and kept on file. The report should evaluate the success of the restoration effort and any on-going weed control. Photographs must be taken of the restoration area pre- and post-implementation. The photo points must be recorded and placed on a map so that future annual monitoring reports can include photographs taken from the same photo points. The report will include a summary of how many woody plants died and an evaluation of the causes. The report will describe necessary remedial activities to ensure the success of the plantings, including additional pest control, weed control, irrigation, replants, etc. The report must also contain recommendations for maintenance and an evaluation of the success of the restoration to that point in time. Any natural or human disturbances should be described.

At the end of the 5-year period, the restoration will be considered successful if 60% of the shrubs are alive (any new natural tree or shrub recruits can be counted toward the total). If the success criteria are not met, additional replants will be needed to reach the success criteria percentages. These new replants must be maintained and monitored for one additional year.

Because this site is within the floodplain and could be fully inundated, there is risk that plants could be washed away before they are fully established.

6. REPORT AUTHORS

The following individuals prepared the text presented in this analysis.

Name	Education	Role	Experience
Rick Lind	M.A., Geography (Water Resources) U.C. Davis B.A. Geography (Natural Resources) CSU Sacramento	Principal-in-Charge	34+ years of environmental regulatory compliance for water, energy, and land resource development
Kristine Kiehne	M.S. Coursework, Horticulture UC Davis B.S. Biology Washington University	Principal Terrestrial Ecologist	17+ years as Biologist
Jeremy Waites	M.S. Coursework, Forestry (in progress) Auburn University, Alabama B.S. Forestry Auburn University, Alabama	Assoc. Terrestrial Ecologist/ GIS Technician	5+ years as Ecologist and 12+ years as a GIS Technician

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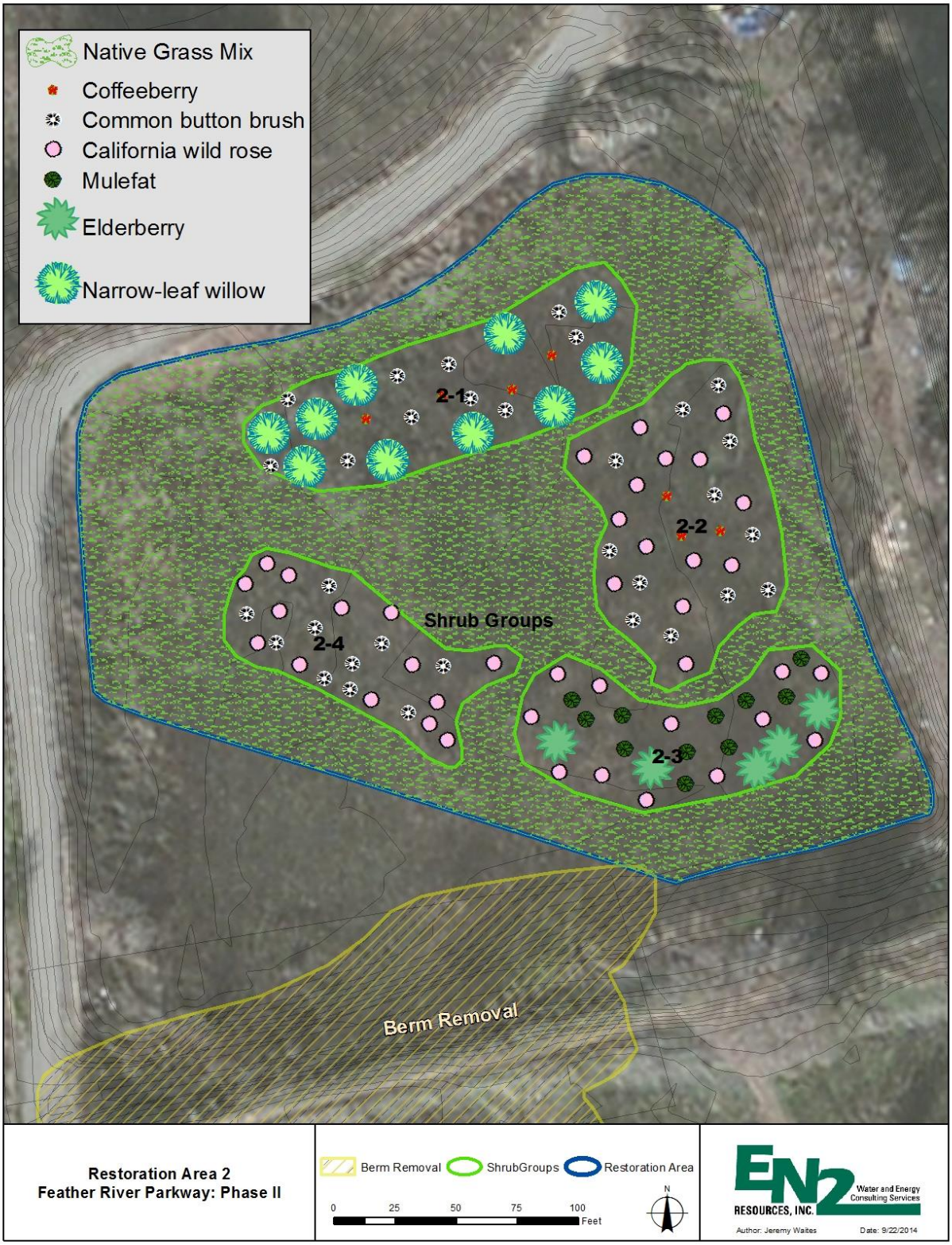
Appendix A
UCANR Monitoring Data Sheet and Instructions

Attachment 1
Restoration Planting Plan Maps

Restoration Area 1

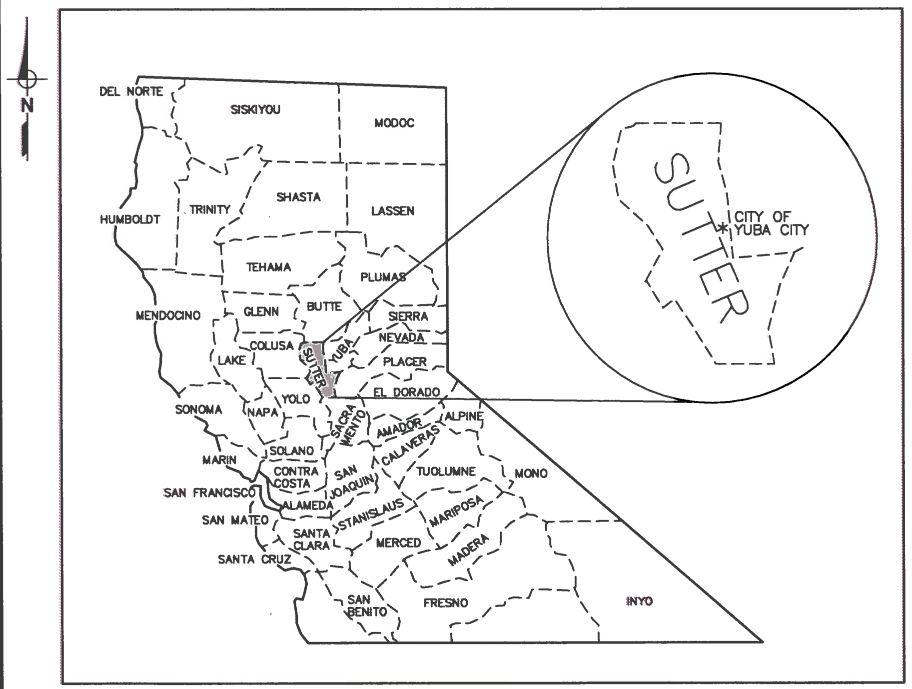
Restoration Area 2



FEATHER RIVER PARKWAY - PHASE 2

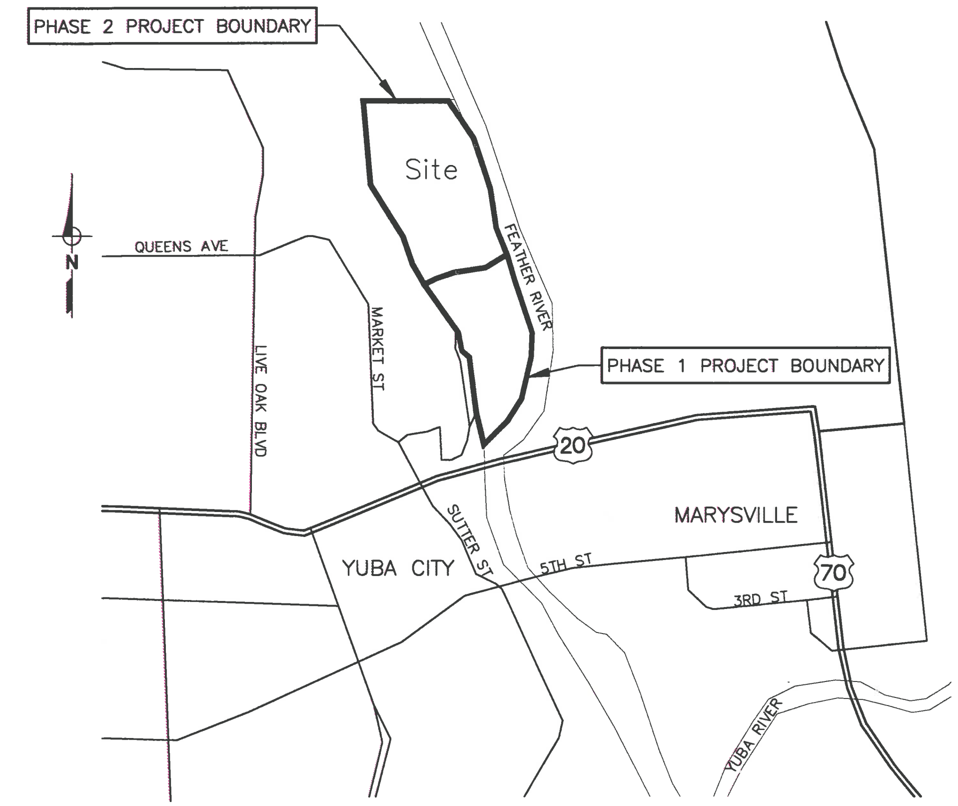
JANUARY 2015

COUNTY OF SUTTER
STATE OF CALIFORNIA



VICINITY MAP
NOT TO SCALE

SHEET INDEX



LOCATION MAP
NOT TO SCALE

CITY OF YUBA CITY

APPROVED FOR CONSTRUCTION OF FEATHER RIVER PARKWAY-WILLOW ISLAND PHASE 2 PROJECT ON ???? ??, 2014
BY THE CITY OF YUBA CITY COUNCIL
DWG NO. 5330-D

TERREL LOCKE, CITY CLERK

LEVEE DISTRICT 1

REVIEWED BY LEVEE DISTRICT 1

[signature] Date Jan 15, 2015

Z:\PROJECT FILES\YUBA-002 PARKWAY PHASE II\DWG\CD_WILLOW ISLAND PHASE 2.DWG
20150112.100036

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING: 0 1/2 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED M. HAUGE
DRAWN J. CADE
CHECKED J. DOMENICHELLI

DOMENICHELLI & ASSOCIATES
1101 Investment Blvd. Suite 115
El Dorado Hills, CA 95762
Ph: (916) 933-1997
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YUBA CITY
CITY OF YUBA CITY
1201 CIVIC CENTER BLVD.
YUBA CITY, CA 95993
PHONE: (530) 822-4626

REGISTERED PROFESSIONAL ENGINEER JOSEPH W. DOMENICHELLI — CIVIL — STATE OF CALIFORNIA [signature] 1-12-15

FEATHER RIVER PARKWAY - PHASE 2

COVER SHEET

SHEET G1
1 OF 18

Attachment C - Restoration Plans

GENERAL REQUIREMENTS

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CAL TRANS STANDARD SPECIFICATIONS AND HIGHWAY DESIGN AND TRAFFIC MANUALS, THE COUNTY OF SUTTER AND THE CITY OF YUBA CITY (CITY) DESIGN STANDARDS.

2. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK INDICATED IN THESE PLANS AND SPECIFICATIONS. ANY ITEM INDICATED IN THESE PLANS BUT NOT ITEMIZED IN THE BID SCHEDULE WILL BE INCLUDED UNDER A BID SCHEDULE ITEM TO WHICH IT MOST PERTAINS.

3. CONTRACTORS SHALL NOT WORK FROM PARTIAL SETS OF DOCUMENTS, AND SHALL READ AND BE FAMILIAR WITH THE DOCUMENTS AND THE WORK DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CITY. OBVIOUS ERRORS OR INCONSISTENCIES SHALL NOT SERVE AS A BASIS FOR A CLAIM AS AN EXTRA.

4. CONTACT CITY OF YUBA PUBLIC WORKS DEPARTMENT AT 530-822-4632 AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION TO SET UP PRE-CONSTRUCTION SITE INSPECTION AND MEETING.

5. THE CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATION OF RUBBISH AND DEBRIS. POLICE AREA DAILY. DISPOSE OF ALL TRASH IN A LAWFUL MANNER. KEEP STREETS SWEPT CLEAN.

6. PROJECT COORDINATION: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE WORK AND ENTITIES ENGAGED TO PERFORM WORK. COORDINATE WORK WITH EXISTING FACILITIES IF ANY, AND WORK WITH CITY TO ASSURE ORDERLY PROGRESS. THE CONTRACTOR SHALL ESTABLISH AND COORDINATE SCHEDULES, MONITOR PROGRESS, COORDINATE LAB/TESTING SERVICES, VERIFY LABOR AND DELIVERIES, RESOLVE CONFLICTS, CONTROL USE OF SITE, AND RELATED ITEMS. COORDINATE LAB/TESTING SERVICES, VERIFY LABOR AND DELIVERIES, RESOLVE CONFLICTS, CONTROL USE OF SITE, AND RELATED ITEMS.

7. THE CONTRACTOR SHALL EXAMINE THE SITE, COMPARE IT WITH THE PLANS AND SPECIFICATIONS, CAREFULLY EXAMINE ALL OF THE CONTRACT DOCUMENTS, AND SATISFY HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED BEFORE ENTERING INTO THIS CONTRACT. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE ON BEHALF OF THE CONTRACTOR ON ACCOUNT OF AN ERROR ON HIS PART AND/OR HIS NEGLIGENCE AND/OR FAILURE TO ACQUAINT HIMSELF WITH THE CONDITIONS OF THE SITE. EACH CONTRACTOR OR INSTALLER SHALL INSPECT CONDITIONS PRIOR TO INSTALLATION OF WORK AND SHALL NOTIFY THE CITY IN WRITING OF UNSATISFACTORY CONDITIONS AND RECOMMENDATIONS FOR CORRECTION.

8. RECEIVE, STORE, AND HANDLE PRODUCTS TO PREVENT DAMAGE. REPLACE DAMAGED MATERIALS.

   A. IF OWNER OCCUPIES SITE, COORDINATE STORAGE WITH OWNER'S REQUIREMENTS.
   B. STORE PRODUCTS PER MANUFACTURER'S RECOMMENDATIONS.

9. ALTERATIONS/MINOR CHANGES: THE CONTRACTOR SHALL MAKE ALLOWANCES FOR MINOR CHANGES AS DETERMINED BY JOB PROGRESS. THE CONTRACT PRICE SHALL NOT BE ALTERED FOR MINOR CHANGES LIKE MINOR DIMENSION OR PLAN CHANGES AND VARIATIONS TO AVOID INTERFERENCES AND OBSTRUCTIONS. CONTRACT PRICE WILL BE ALTERED FOR SCOPE CHANGES.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS OF REESTABLISHING ANY SURVEY CONTROL MONUMENTS IF THEY ARE DISTURBED.

11. CONSTRUCTION STAKING: THE CONTRACTOR SHALL ARRANGE AND PAY FOR THE SERVICES OF A LICENSED LAND SURVEYOR TO PROVIDE ALL GRADE STAKES, CONTROL POINTS & ESTABLISH PERMANENT MARKERS. ALL CONSTRUCTION STAKING, LAYOUT AND MEASUREMENTS, SURVEYING AND FIELD ENGINEERING NECESSARY TO ESTABLISH THE LINES AND GRADE STAKES INDICATED IN THESE PLANS AND SPECIFICATIONS SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR. ALL SURVEY WORK IS TO BE PERFORMED BY A LICENSED LAND SURVEYOR.

12. LAYOUT CONTRACTOR SHALL VERIFY ALL GRADES, LINES, LEVELS, AND DIMENSIONS INDICATED IN THE CONTRACT DOCUMENTS AND REPORT INCONSISTENCIES TO THE CITY FOR RESOLUTION. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ESTABLISHMENT OF CONTROL LINES AND LEVELS FOR ALL WORK AND WILL BE RESPONSIBLE FOR OVERALL LAYOUT OF THE WORK. THE CONTRACTOR SHALL ESTABLISH BENCHMARKS AS REQUIRED TO MAINTAIN ACCURATE ELEVATIONS.

13. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL EXISTING UTILITIES AND PROTECTING AND REPAIRING DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (800-642-2444) TWO WORKING DAYS PRIOR TO WORK COMMENCEMENT. COORDINATE REQUIREMENTS WITH LOCAL UTILITY COMPANIES.

14. STANDARDS OF THE CONSTRUCTION INDUSTRY OR MANUFACTURER'S STANDARDS HAVE THE SAME FORCE AND EFFECT ON PERFORMANCE AS IF COPIED DIRECTLY INTO THE CONTRACT DOCUMENTS OR BOUND AND PUBLISHED THEREWITH. COMPLIANCE WITH INDUSTRY AND MANUFACTURER'S STANDARDS FOR PERFORMANCE AND INSTALLATION OF THE WORK IS A REQUIRED MINIMUM.

15. IF AN ITEM IS SHOWN BUT NOT SPECIFIED, PROVIDE A PRODUCT OF NOT LESS THAN COMMERCIAL OR "CONTRACT" QUALITY CONSISTENT WITH THE BALANCE OF THE WORK. IF AN ITEM IS SPECIFIED BUT NOT SHOWN, LOCATE AS DIRECTED BY THE CITY.

16. WHEN THERE IS A CONFLICT IN QUALITY OR QUANTITY, THE GREATER QUANTITY OR BETTER QUALITY SHALL PREVAIL. WHERE THERE ARE CONFLICTING REQUIREMENTS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

17. INTERRUPTION OF SERVICES: THE CONTRACTOR SHALL PROVIDE 24 HOUR NOTICE TO OWNER WHEN IT IS NECESSARY TO INTERRUPT SERVICES. NOTIFY ADJACENT PROPERTY OWNERS, BYPASS SERVICE TO MAINTAIN OWNERS OPERATIONS IF NECESSARY. ARRANGEMENTS SHALL BE MADE WITH THE OWNER.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STREETS OR SIDEWALKS DURING THE CONSTRUCTION OF THIS PROJECT AND SHALL REPAIR SUCH DAMAGE TO THE SATISFACTION OF THE GOVERNING AGENCY AT NO EXTRA COST TO THE CITY.

19. DEMOLITION OF EXISTING FEATURES SHALL BE LIMITED TO THE ITEMS SHOWN ON THE PLANS AND DESCRIBED IN THE CONTRACT DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE ALL EXISTING FEATURES DAMAGED BY HIS OPERATIONS, AT HIS EXPENSE.

20. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR PROTECTING EXISTING TREES NOT SCHEDULED TO BE REMOVED BY THIS CONTRACT. ANY TREE DAMAGED SHALL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE CITY.

21. TESTING: THE CITY SHALL EMPLOY AND PAY FOR SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM SPECIFIED TESTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR TESTS THAT MAY BE REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION OR APPLICABLE BUILDING CODES, FORWARD REPORTS TO THE CITY AND CITY'S REPRESENTATIVE. RETESTS, REPAIR OF FINISHES, AND NON-CONFORMING WORK SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

22. THE CONTRACTOR SHALL ARRANGE FOR ACCESS TO TEMPORARY UTILITIES (ELECTRIC AND WATER) WITH THE CITY. PROVIDE ENCLOSURES, SHEDS, AND BARRICADES NECESSARY FOR EXECUTION OF THE WORK AND REQUIRED BY LOCAL AUTHORITIES FROM OWNER'S SERVICES IF UTILITIES ARE NOT AVAILABLE. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH LOCAL UTILITY COMPANIES FOR TEMPORARY SERVICES AND PAY ALL USE CHARGES.

23. TEMPORARY ENCLOSURE: PROVIDE ENCLOSURES TO PROTECT WORK IN PLACE FROM WEATHER OR EXPOSURE OR OTHER CONSTRUCTION OPERATIONS.

24. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FURNISHING, INSTALLING AND MAINTAINING ALL WARNING SIGNS AND DEVICES NECESSARY TO SAFEGUARD THE GENERAL PUBLIC ROUTING OF THE VEHICULAR AND PEDESTRIAN TRAFFIC DURING THE PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO WORKING HOURS, COMPLY WITH THE CITY OF YUBA CITY STANDARD CONSTRUCTION SPECIFICATIONS. BARRICADE OPEN EXCAVATIONS AND PROVIDE WARNING LIGHTS TO PROTECT THE PUBLIC.

25. ACCESS TO SITE: THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, ROADS, STREETS, CURBS, PARKING LOTS, DRIVES, AND WORK-IN-PLACE DURING CONSTRUCTION. UNDOCUMENTED DAMAGE WILL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALLOCATING SPACE ON SITE.

26. DO NOT BLOCK DRIVES OR ENTRANCES SERVING THE SITE.

27. FINAL CLEANING: THE CONTRACTOR SHALL LEAVE THE SITE IN A CLEAN AND NEAT CONDITION, PROVIDE SERVICE THAT EQUALS THE QUALITY OF A COMMERCIAL CLEANING SERVICE. KEEP PUBLIC WALKS AND STREETS SWEPT CLEAN, PROVIDE GENERAL PICK-UP OF TRASH AND DEBRIS EACH DAY. ON-SITE BURNING OF TRASH IS NOT PERMITTED.

28. PROVIDE INDICATED PRODUCTS: DO NOT SUBSTITUTE NAMED PRODUCTS OR MATERIALS UNLESS OTHERWISE APPROVED BY THE CITY.

30. RECORD DOCUMENTS: EACH CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF THE WORK AND CHANGES ON A "JOB RECORD SET" OF DRAWINGS AND TURN RECORD DRAWINGS OVER TO THE CITY AT THE COMPLETION OF THE WORK.

31. CONTRACTOR IS RESPONSIBLE FOR OBTAINING NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY INCLUDING THE SWPPP.

32. CONTRACTOR IS TO VIDEO OR PHOTOGRAPH JOBSITE AREA TO DOCUMENT EXISTING CONDITIONS PRIOR TO START (i.e. CULVERTS, DRIVEWAYS, EXISTING PAVEMENT CONDITIONS, STRIPING, EDGE OF ROAD, PRIVATE PROPERTY, LANDSCAPING, FENCING, ETC.) TO MINIMIZE UNDUE CLAIMS. CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL PROPERTY TO ORIGINAL OR BETTER CONDITION.

33. SOIL IN YUBA CITY IS GENERALLY CLAYEY SAND, CLAYEY SILT, SILTY SAND, SAND, ETC. THE CITY OF YUBA CITY MAKES NO REPRESENTATIONS AS TO THE TYPE OF SOIL THAT WILL BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DO ANY SOILS TESTS NECESSARY TO DETERMINE THE ACTUAL SOIL CONDITIONS THAT WILL BE ENCOUNTERED ON THIS PROJECT.

34. CONTRACTOR SHALL PROVIDE THE USA TICKET NUMBER FOR THIS PROJECT TO THE CITY PRIOR TO COMMENCING ANY EXCAVATIONS.

35. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY TRAFFIC MARKERS AND/OR MARKINGS DAMAGED OR REMOVED DURING CONSTRUCTION. TEMPORARY MARKERS SHALL BE USED DURING CONSTRUCTION.

36. THE CONTRACTOR SHALL POSSESS A CLASS "A" LICENSE, OR ANY OTHER LICENSE(S) REQUIRED BY THE STATE OF CALIFORNIA.

37. CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE CITY OF YUBA CITY PRIOR TO THE START OF WORK. FEES WILL BE WAIVED.

38. CONTRACTOR IS TO PROVIDE AND IMPLEMENT AN APPROVED TRAFFIC CONTROL PLAN PRIOR TO THE START OF WORK.

39. THE CONTRACTOR SHALL ENSURE THAT ALL PRIVATE VEHICLES BE EITHER PARKED OFF-SITE OR OUTSIDE OF CONSTRUCTION AREAS. ALL VEHICLES, CONSTRUCTION EQUIPMENT, AND CONSTRUCTION MATERIAL RELATED TO THE PROJECT SHALL BE ORGANIZED IN SUCH A MANNER TO PROVIDE EMERGENCY VEHICLE ACCESS TO THE ENTIRE PROJECT.

40. ALL MATERIALS USED AND WORK PERFORMED IN CONSTRUCTION AND INSTALLATION SHALL COMPLY WITH APPROVED PLANS AND CONTRACT DOCUMENTS. ANY AND ALL DEVIATIONS FROM THESE DOCUMENTS SHALL REQUIRE PRIOR WRITTEN APPROVAL BY THE CITY.

41. TEN (10) DAYS PRIOR TO PRE-CONSTRUCTION MEETING, THE CONTRACTOR SHALL FURNISH TO THE CITY, A LIST OF MATERIALS PROPOSED TO BE USED IN CONSTRUCTING THE PROJECT, INCLUDING MANUFACTURER, ACTUAL LOCATION OF MANUFACTURER AND MODEL NUMBER.

42. AN ON-SITE MEETING WITH THE CITY INSPECTOR, CONSULTING ENGINEER AND CONTRACTOR MUST BE HELD AT LEAST TWO (2) DAYS IN ADVANCE OF CONSTRUCTION . PRE-CONSTRUCTION MEETINGS WILL NOT BE SCHEDULED UNTIL ALL CITY COSTS AND FEES HAVE BEEN PAID IN FULL AS WELL AS SUBMITTALS OF ALL MATERIAL LISTS, GUARANTEE LETTERS, ENCROACHMENT/MAINTENANCE BONDS, FINAL SIGNED PLANS, REPRODUCIBLE PLANS AND ELECTRONIC FILE OF PROJECT.

43. CONSTRUCTION WATER FOR THE PROJECT WILL BE AVAILABLE FROM A FIRE HYDRANT ON THE DRY SIDE OF THE LEVEE THE CONTRACTOR WILL NEED TO OBTAIN A HYDRANT METER AND PERMIT FROM THE CITY OF YUBA CITY FINANCE DEPARTMENT AT THEIR EXPENSE FOR CONSTRUCTION WATER.

DEMOLITION NOTES

1. DISPOSAL OF ALL DEBRIS SHALL BE OFF-SITE AND THE CONTRACTOR'S RESPONSIBILITY.
2. CONTRACTOR SHALL STRIP AND STOCKPILE TOPSOIL THAT EXISTS ON SITE (WITHIN PROPOSED AREA OF DISTURBANCE).
3. TOPSOIL SHALL BE REASONABLY FREE OF SUBSOIL CLAY LUMPS, STONES AND OTHER OBJECTS OVER 1/2" DIAMETER AND WITHOUT WEEDS, ROOTS, AND OTHER OBJECTIONABLE MATTER.
4. PROVIDE 4" OF TOPSOIL, SEED AND HYDRAULIC MULCH IN ALL DISTURBED AREAS.

GRADING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS BEFORE PROCEEDING WITH WORK AND REPORT ANY DISCREPANCIES TO THE OWNER.
2. SLOPE ALL SURFACES TO DRAIN.
3. PROVIDE, INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES BEFORE PROCEEDING WITH WORK.
4. GRADES SHOW FINISHED ELEVATIONS.

SURVEY NOTES

1. TOPOGRAPHIC SURVEY PREPARED BY ALAN DIVERS, PLS PLACERVILE, CA 2013.
2. AERIAL SURVEY PROVIDED BY VERTICAL MAPPING RESOURCES, INC. AND PLANIMETRIC AND TOPOGRAPHIC FEATURES IN OBSCURED AREAS MAY NOT MEET MAP ACCURACY STANDARDS.
3. HORIZONTAL DATUM IS PT #1 ASSUMED N=5000, E=5000 AND GEODETIC NORTH AS ASCERTAINED FROM THE GPS UNITS.
4. VERTICAL DATUM IS NAVD 88 BENCHMARK A COUPLE MILES AWAY KS1969 AT ELEV=61.74'.
5. BENCHMARK (PT #1) IS 82.43' ON TOP OF THE BERM (SEE SHEET C1 FOR LOCATION).THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ABBREVIATIONS

AB - AGGREGATE BASE
ABAN - ABANDON
AC - ASPHALT CONCRETE
BVC- BEGIN VERTICAL CURVE
CL - CENTER LINE / CLASS
CMP - CORRUGATED METAL PIPE
CVTOP -TOP OF CULVERT (SIZE)
CFL - CURB FLOWLINE
DI - DRAIN INLET
DT - DITCH (CENTER "V")
EL - ELEVATION
EOP - EDGE OF PAVEMENT
EVC- END VERTICAL CURVE
EXIST/EX/(E)-EXISTING
FF - FINISH FLOOR
FG - FINISH GRADE
FL - FLOWLINE
FOC - FACE OF CURB
FS- FINISH SURFACE
GB - GRADE BREAK
HP - HIGH POINT
IE - INVERT ELEVATION
INV - INVERT
L - LENGTH
MAX - MAXIMUM
MIN - MINIMUM
NO. - NUMBER
P - PAD ELEVATION
PL - PROPERTY LINE
PP - POWER POLE
PRVC-POINT REVERSE VERTICAL CURVE
PT- PICNIC TABLE
PVI- POINT VERTICAL INTERSECTION
PVMT - PAVEMENT
R - RADIUS
REPL-REPLACE
ROW -RIGHT OF WAY
TYP - TYPICAL

SYMBOL LEGEND

SYMB	DESC KEY	DESCRIPTION	SYMB	DESC KEY	DESCRIPTION
	AC	AIR CONDITIONER		BH	BUSH / SHRUB
	ECBX	ELECTRIC BOX		T12	12" TREE
	ECEL	ELECTROLIER		O12	12" OAK
	ECMT	ELECTRIC METER		P12	12" PINE
	ECMH	ELECTRIC MANHOLE		DI	DRAINAGE INLET
	TF	ELECTRIC TRANSFORMER		DD	DOWN DRAIN
	PP	POWER / ELEC. POLE		SDMH	STORM DRAIN MANHOLE
	PH	PUBLIC PHONE		FH	FIRE HYDRANT
	GUY	GUY WIRE		BO	BLOWOFF
	LITE	STREET LIGHT		WTVA	WATER VALVE
	GSMH	GAS MANHOLE		WELL	WELL
	GSMT	GAS METER		MW	MONITORING WELL
	GSVA	GAS VALVE		RRS	RAILROAD SIGNAL
	IRBX	IRRIGATION BOX		BD	BOLLARD
	IRMH	IRRIGATION MANHOLE		SIGN	SIGN
	IRVA	IRRIGATION VALVE		TS	TRAFFIC SIGNAL
	SSCO	SANITARY CLEAN OUT		TSBX	TRAFFIC SIGNAL BOX
	SSMH	SANITARY MANHOLE		FCOR	FENCE CORNER
	MB	MAIL BOX		SB	SOIL BORING
		BIKE TRAIL			PAVILION
		PEDESTRIAN TRAIL			PICNIC TABLE
		BOARDWALK			GARBAGE CAN
		TREES & PLANTS			REMOVABLE BOLLARDS
		EXISTING ROAD AND BIKE PATH			
		EXISTING PEDESTRIAN TRAIL			
		EXISTING BOARDWALK			
		EXISTING DITCH FLOWLINE			
		EXISTING WETLAND AREAS			
		EXISTING ELDERBERRY AREAS			
		PROPERTY LINES/ROW LINES			
		PROPOSED CENTERLINE, PEDESTRIAN & BIKE PATHS			
		PROPOSED BIKE PATH			
		PROPOSED PEDESTRIAN TRAIL			
		PROPOSED BOARDWALK			

LDL 1-15-15

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20141231.104252

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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CHECKED J. DOMENICHELLI

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REGISTERED PROFESSIONAL ENGINEER JOSEPH W. DOMENICHELLI STATE OF CALIFORNIA CIVIL

1-12-15

FEATHER RIVER PARKWAY - PHASE 2

NOTES, ABBREVIATIONS & SYMBOLS

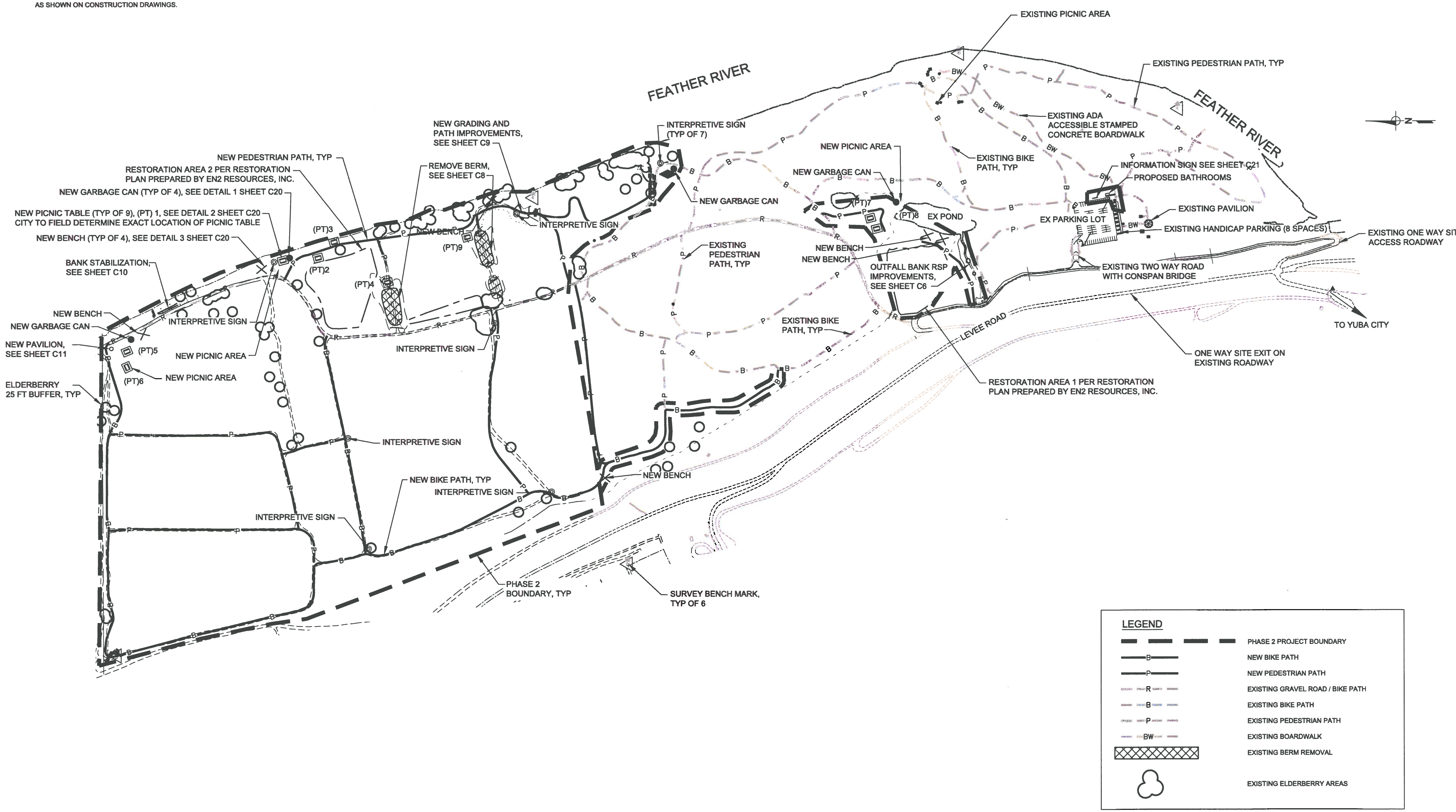
SHEET G2

2 OF 18

Attachment C - Restoration Plans

NOTES:

1. FINAL LOCATION OF ALL SITE FURNISHINGS SHALL BE REVIEWED AND APPROVED BY THE CITY IN THE FIELD BEFORE INSTALLATION. BID QUANTITIES WERE CALCULATED OFF OF APPROXIMATE LOCATIONS AS SHOWN ON CONSTRUCTION DRAWINGS.



LD 1 1-15-15

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20150106.115352

REV	DATE	BY	DESCRIPTION

SCALE: 1:200

WARNING: 0 1/2 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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FEATHER RIVER PARKWAY - PHASE 2

OVERALL PHASE 1 & PHASE 2 SITE PLAN

SHEET C1

3 OF 18

Attachment C - Restoration Plans

NOTE

PHASE 2 AERIAL TOPOGRAPHIC SURVEY FLOWN ON JULY 1, 2013.

TOPOGRAPHIC SURVEY DATA SHOWN IN PHASE 1 AREA IS THE ORIGINAL AERIAL SURVEY FOR THE PHASE 1 PROJECT AND DOES NOT REPRESENT EXISTING CONDITIONS FOLLOWING CONSTRUCTION OF PHASE 1 IMPROVEMENTS.

PATHWAY/ROADWAY SURFACE IMPROVEMENTS LEGEND

- BIKE PATH (AB)
- PEDESTRIAN PATH (DECOMPOSED GRANITE)

ENVIRONMENTAL LEGEND

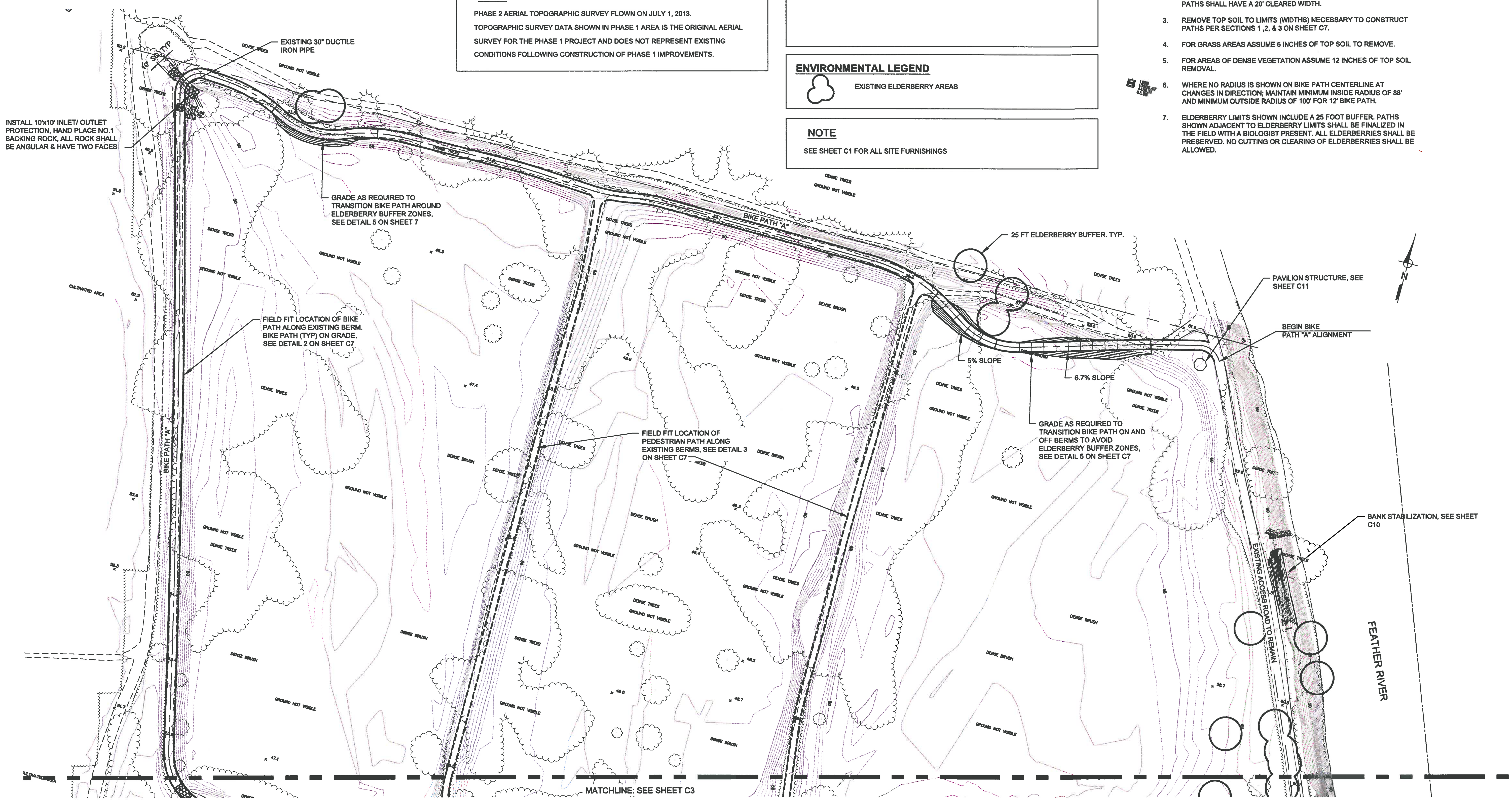
- EXISTING ELDERBERRY AREAS

NOTE

SEE SHEET C1 FOR ALL SITE FURNISHINGS

NOTES:

1. TRIM DENSE VEGETATION AND MOW GRASSES 4' BEYOND SHOULDER OF BIKE PATHS AND 3' BEYOND PEDESTRIAN TRAVEL PATH. TREES GREATER THAN 4" IN DIAMETER SHALL REMAIN.
2. PEDESTRIAN TRAILS SHALL HAVE A 10' CLEARED WIDTH AND BIKE PATHS SHALL HAVE A 20' CLEARED WIDTH.
3. REMOVE TOP SOIL TO LIMITS (WIDTHS) NECESSARY TO CONSTRUCT PATHS PER SECTIONS 1 ,2, & 3 ON SHEET C7.
4. FOR GRASS AREAS ASSUME 6 INCHES OF TOP SOIL TO REMOVE.
5. FOR AREAS OF DENSE VEGETATION ASSUME 12 INCHES OF TOP SOIL REMOVAL.
6. WHERE NO RADIUS IS SHOWN ON BIKE PATH CENTERLINE AT CHANGES IN DIRECTION; MAINTAIN MINIMUM INSIDE RADIUS OF 88' AND MINIMUM OUTSIDE RADIUS OF 100' FOR 12' BIKE PATH.
7. ELDERBERRY LIMITS SHOWN INCLUDE A 25 FOOT BUFFER. PATHS SHOWN ADJACENT TO ELDERBERRY LIMITS SHALL BE FINALIZED IN THE FIELD WITH A BIOLOGIST PRESENT. ALL ELDERBERRIES SHALL BE PRESERVED. NO CUTTING OR CLEARING OF ELDERBERRIES SHALL BE ALLOWED.



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20150106.115352

LD 1 1-15-15

REV	DATE	BY	DESCRIPTION

SCALE: 1" = 60'

WARNING: 0 1/2 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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1-12-15

FEATHER RIVER PARKWAY - PHASE 2

PEDESTRIAN & BIKE PATH PLAN-NORTH

SHEET C2

4 OF 18

MATCHLINE: SEE SHEET C2

PLACE 20 LFx12' PATH WIDTH OF TURF BLOCK PER DETAIL 6 SHEET C7

FIELD FIT LOCATION OF PEDESTRIAN PATH ALONG EXISTING BERMS, SEE DETAIL 3 ON SHEET C7

FIELD FIT LOCATION OF BIKE PATH ALONG EXISTING BERM. BIKE PATH (TYP) ON GRADE, SEE DETAIL 2 ON SHEET C7

BIKE PATH "A"

BIKE PATH "A"= BEGIN BIKE PATH "B"

BIKE PATH "B"

FIELD FIT LOCATION OF BIKE PATH ALONG EXISTING BERM. BIKE PATH (TYP) ON GRADE, SEE DETAIL 2 ON SHEET C7

STA 9+43 END BIKE TRAIL "B"

RESTORATION AREA 2 - SEE RESTORATION PLAN PREPARED BY EN2 RESOURCES, INC. FOR PLANTING REQUIREMENTS

FEATHER RIVER

FIELD FIT LOCATION OF PEDESTRIAN PATH ALONG EXISTING BERM AND TREES

LIMITS OF PROPOSED SPOIL AREA FOR BERM "A", BERM "B", & BANK STABILIZATION EXCAVATION, MAXIMUM FILL 36", PREPARE SUBGRADE AND COMPACT PER SPECIFICATIONS, GRADE TO DRAIN (2% MIN, 4:1 MAX) TOWARDS NEW OPENING IN BERM

RECONFIGURED BERM "A", SEE SHEET C8 DETAIL 1

25 FT ELDERBERRY BUFFER. TYP.

EXISTING ACCESS ROAD TO REMAIN

CLEARING LIMITS

10% SLOPE

GRADE AS REQUIRED TO TRANSITION PEDESTRIAN PATH ON AND OFF BERMS TO AVOID ELDERBERRY BUFFER ZONES, SEE DETAIL 4 ON SHEET C7

LIMITS OF PROPOSED SPOIL AREA FOR BERM "A", BERM "B" EXCAVATION, MAXIMUM FILL 36", PREPARE SUBGRADE AND COMPACT PER SPECIFICATIONS, GRADE TO DRAIN (2% MIN, 4:1 MAX) TOWARDS EAST

FIELD FIT LOCATION OF BIKE PATH (TYP) ON GRADE, SEE DETAIL 2 ON SHEET C7

BIKE PATH "A"

GRADE AS REQUIRED TO TRANSITION BIKE PATH ON AND OFF BERMS TO AVOID ELDERBERRY BUFFER ZONES, SEE DETAIL 5 ON SHEET C7

5% SLOPE

MATCHLINE: SEE SHEET C4

PATHWAY/ROADWAY SURFACE IMPROVEMENTS LEGEND

BIKE PATH (AB)

PEDESTRIAN PATH (DECOMPOSED GRANITE)

ENVIRONMENTAL LEGEND

EXISTING ELDERBERRY BUFFER AREAS

NOTE

PHASE 2 AERIAL TOPOGRAPHIC SURVEY FLOWN ON JULY 1, 2013. TOPOGRAPHIC SURVEY DATA SHOWN IN PHASE 1 AREA IS THE ORIGINAL AERIAL SURVEY FOR THE PHASE 1 PROJECT AND DOES NOT REPRESENT EXISTING CONDITIONS FOLLOWING CONSTRUCTION OF PHASE 1 IMPROVEMENTS.

NOTE

SEE SHEET C1 FOR ALL SITE FURNISHINGS

NOTES:

1. TRIM DENSE VEGETATION AND MOW GRASSES 4' BEYOND SHOULDER OF BIKE PATHS AND 3' BEYOND PEDESTRIAN TRAVEL PATH. TREES GREATER THAN 4" IN DIAMETER SHALL REMAIN.
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6. WHERE NO RADIUS IS SHOWN ON BIKE PATH CENTERLINE AT CHANGES IN DIRECTION; MAINTAIN MINIMUM INSIDE RADIUS OF 88' AND MINIMUM OUTSIDE RADIUS OF 100' FOR 12' BIKE PATH.
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REV	DATE	BY	DESCRIPTION

SCALE: 1" = 60'

WARNING 0 1/2 1 — IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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DRAWN J. CADE
CHECKED J. DOMENICHELLI

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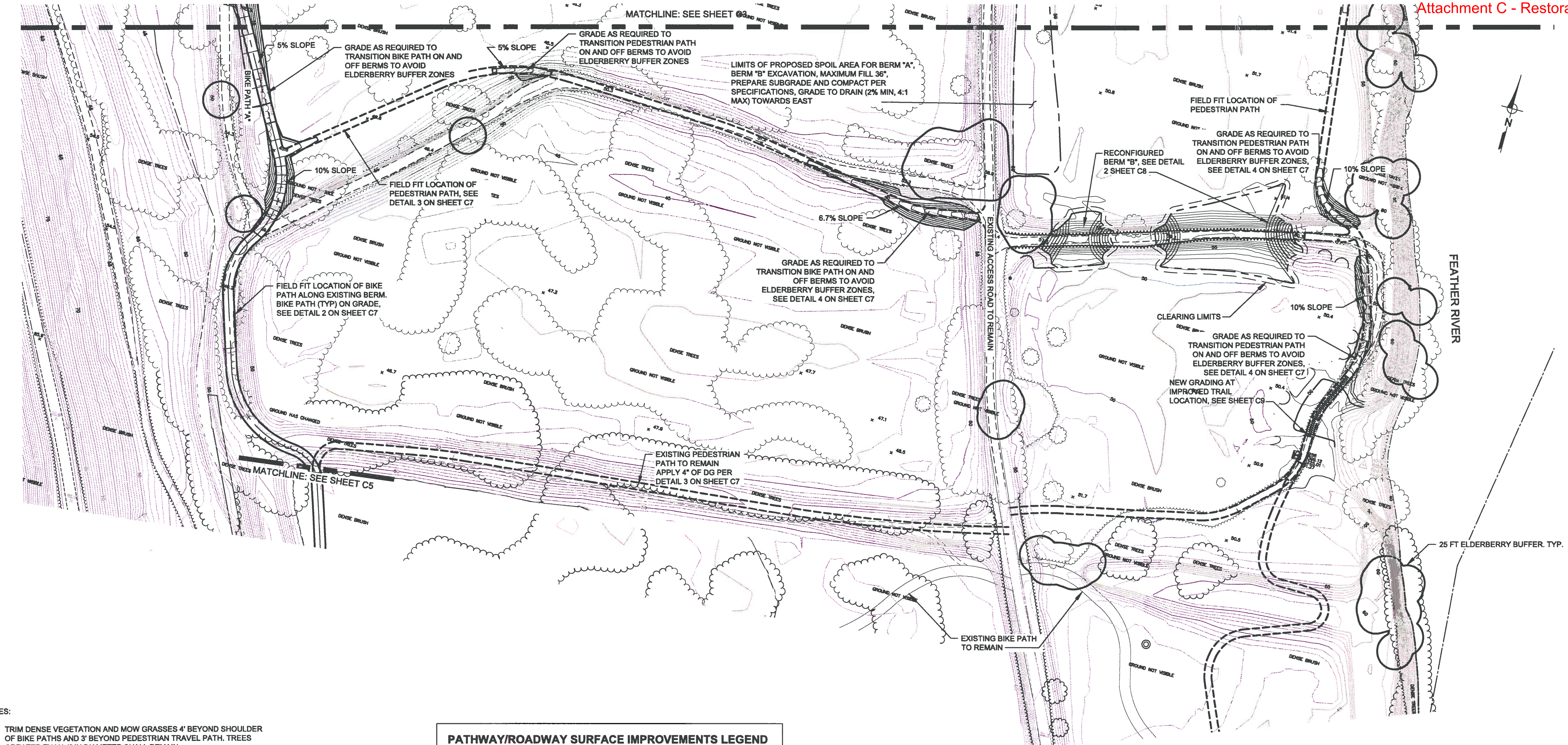
REGISTERED PROFESSIONAL ENGINEER — JOSEPH M. DOMENICHELLI — No. 58068 — Exp. 3/31/15 — CIVIL — STATE OF CALIFORNIA

1-12-15

FEATHER RIVER PARKWAY - PHASE 2

PEDESTRIAN & BIKE PATH PLAN-CENTER

SHEET C3



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PATHWAY/ROADWAY SURFACE IMPROVEMENTS LEGEND

——— BIKE PATH (AB)

- - - - PEDESTRIAN PATH (DECOMPOSED GRANITE)

ENVIRONMENTAL LEGEND

EXISTING ELDERBERRY BUFFER AREAS

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NOTE

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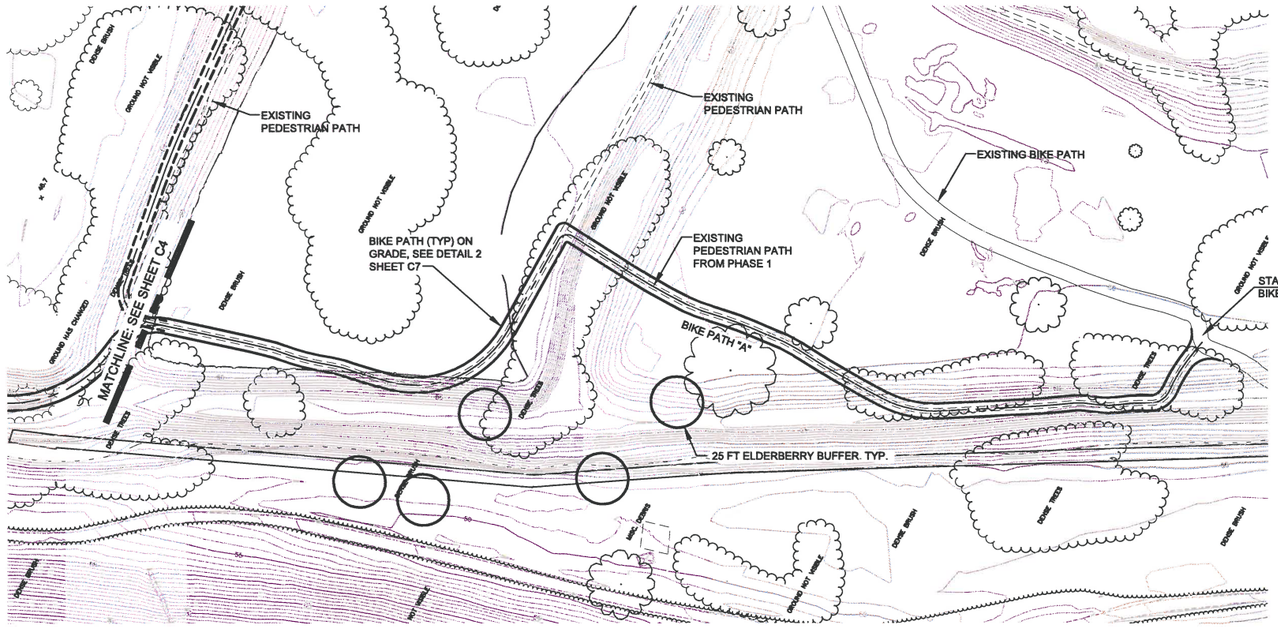
1-12-15

FEATHER RIVER PARKWAY - PHASE 2

PEDESTRIAN & BIKE PATH PLAN-SOUTH

SHEET C4



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PATHWAY/ROADWAY SURFACE IMPROVEMENTS LEGEND

BIKE PATH (AB)
PEDESTRIAN PATH (DECOMPOSED GRANITE)

ENVIRONMENTAL LEGEND

EXISTING ELDERBERRY BUFFER AREAS

LDI 1-15-15

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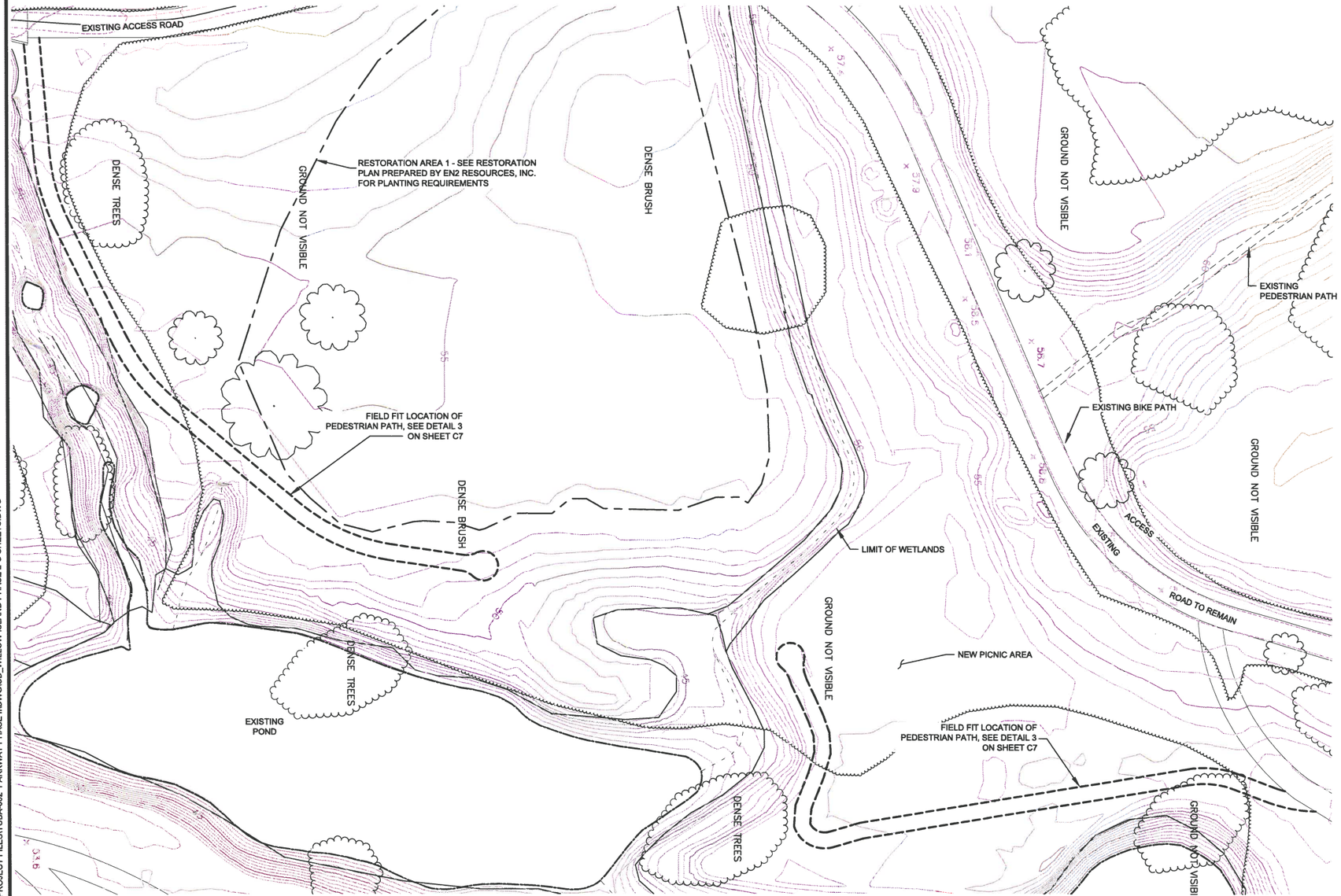
FEATHER RIVER PARKWAY - PHASE 2

PHASE 1 PEDESTRIAN PATH CONVERSION

SHEET C5 7 OF 18

NOTES:

1. TRIM DENSE VEGETATION AND MOW GRASSES 3' BEYOND PEDESTRIAN TRAVEL PATH. TREES GREATER THAN 4" IN DIAMETER SHALL REMAIN.
2. PEDESTRIAN TRAILS SHALL HAVE A 10' CLEARED WIDTH.
3. REMOVE TOP SOIL TO LIMITS (WIDTHS) NECESSARY TO CONSTRUCT PATHS PER SECTIONS 1 ,2, & 3 ON SHEET C7.
4. FOR GRASS AREAS ASSUME 6 INCHES OF TOP SOIL TO REMOVE.
5. FOR AREAS OF DENSE VEGETATION ASSUME 12 INCHES OF TOP SOIL REMOVAL.
6. ELDERBERRY LIMITS SHOWN INCLUDE A 25 FOOT BUFFER. PATHS SHOWN ADJACENT TO ELDERBERRY LIMITS SHALL BE FINALIZED IN THE FIELD WITH A BIOLOGIST PRESENT. ALL ELDERBERRIES SHALL BE PRESERVED. NO CUTTING OR CLEARING OF ELDERBERRIES SHALL BE ALLOWED.



NOTE

SEE SHEET C1 FOR ALL SITE FURNISHINGS

NOTE

PHASE 2 AERIAL TOPOGRAPHIC SURVEY FLOWN ON JULY 1, 2013. TOPOGRAPHIC SURVEY DATA SHOWN IN PHASE 1 AREA IS THE ORIGINAL AERIAL SURVEY FOR THE PHASE 1 PROJECT AND DOES NOT REPRESENT EXISTING CONDITIONS FOLLOWING CONSTRUCTION OF PHASE 1 IMPROVEMENTS.

PATHWAY/ROADWAY SURFACE IMPROVEMENTS LEGEND

- BIKE PATH (AB)
- PEDESTRIAN PATH (DECOMPOSED GRANITE)

LD 1-15-15

Z:\PROJECT FILES\YUBA-002 PARKWAY PHASE II\DWG\CD_WILLOW ISLAND PHASE 2-C SHEETS.DWG

20150106.115352

REV	DATE	BY	DESCRIPTION

SCALE: 1' = 30'

WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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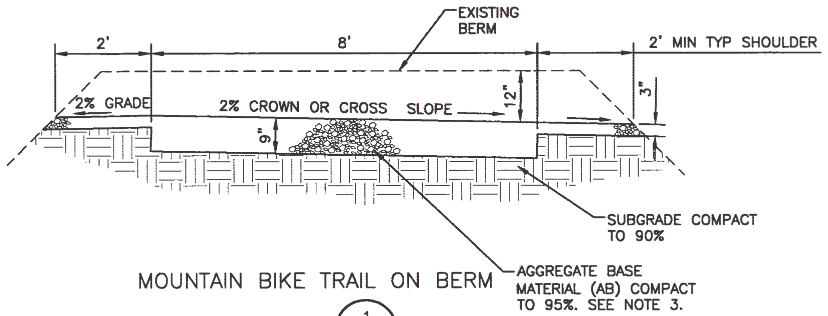
FEATHER RIVER PARKWAY - PHASE 2

POND IMPROVEMENTS-OVERALL PLAN

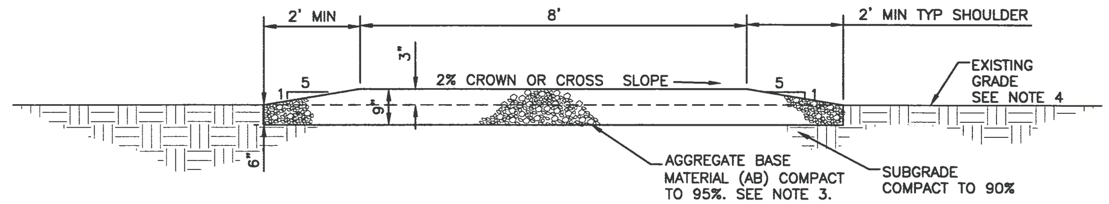
SHEET C6



MOUNTAIN BIKE TRAIL ON BERM

DETAIL 1

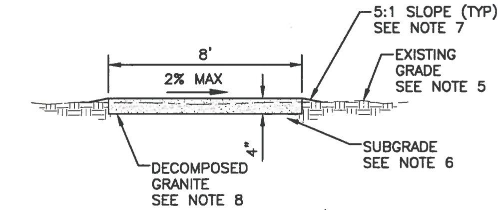
NTS



MOUNTAIN BIKE TRAIL AT GRADE

DETAIL 2

NTS



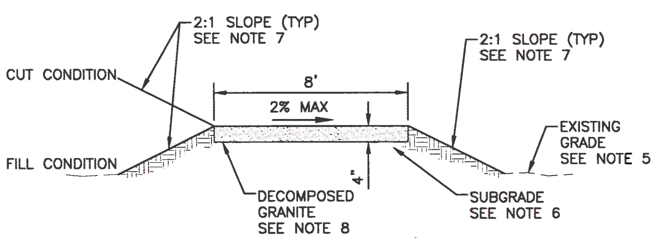
PEDESTRIAN PATH ON BERM/AT GRADE

DETAIL 3

NTS

BIKE AND PEDESTRIAN PATH NOTES:

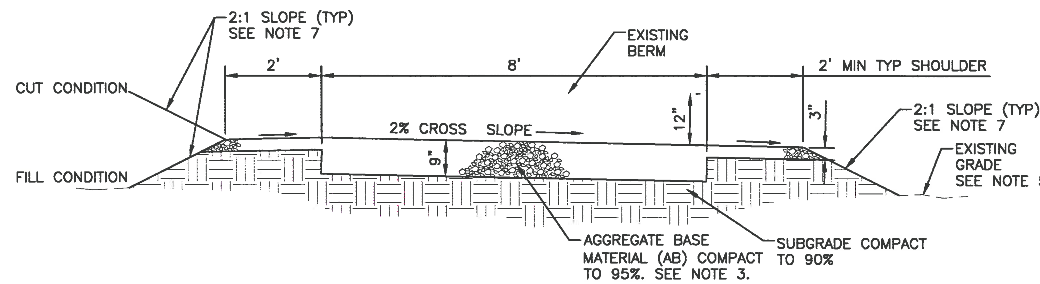
1. REMOVE EXISTING VEGETATION AND 6" OF TOP SOIL AND RECOMPACT TO 90% RELATIVE COMPACTION FOR BIKE PATH AT GRADE.
2. REMOVE EXISTING VEGETATION AND 12" OF TOP SOIL AND RECOMPACT TO 90% RELATIVE COMPACTION PRIOR TO CONSTRUCTION OF BIKE PATH ON BERM.
3. 9" CLASS 2 AB LAYER SHALL BE COMPACTED TO 95% RELATIVE COMPACTION.
4. TRIM VEGETATION 4' BEYOND BIKE PATH SHOULDER ON EACH SIDE.
5. TRIM VEGETATION 3' BEYOND PEDESTRIAN PATH ON EACH SIDE.
6. REMOVE EXISTING VEGETATION AND 3" OF TOP SOIL AND RECOMPACT TO 85% RELATIVE COMPACTION FOR PEDESTRIAN PATH. SPRAY SOIL WITH PRE-EMERGENT WEED CONTROL BEFORE PLACING DECOMPOSED GRANITE.
7. PEDESTRIAN PATHS SHALL HAVE A MAXIMUM LONGITUDINAL GRADE OF 5:1 WITH SMOOTH TRANSITIONS ALONG THE PATH PROFILE.
8. DECOMPOSED GRANITE SHALL BE ¼" WITH FINES AND COLOR TO BE APPROVED BY BY THE CITY.
9. REMOVAL OF ELDERBERRY SHRUBS IS PROHIBITED. SEE SECTION 02110 IN SPECS.
10. BIKE AND PEDESTRIAN PATHS SHOWN WITHIN SENSITIVE HABITAT AREAS SHALL CONTAIN NO GRADING OR FILL.



PEDESTRIAN PATH – BERM ON/OFF TRANSITION

DETAIL 4

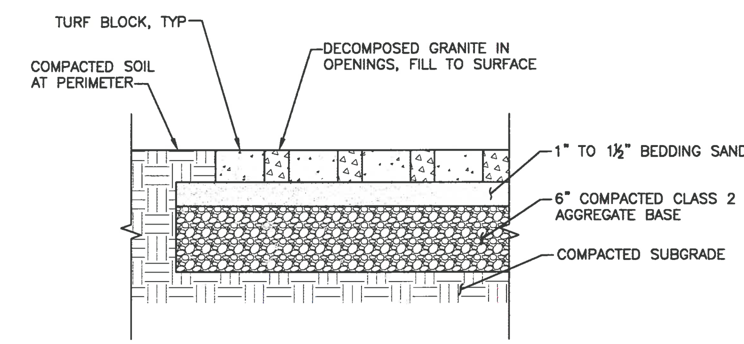
NTS



MOUNTAIN BIKE TRAIL – BERM ON/OFF TRANSITION

DETAIL 5

NTS



TURF BLOCK

DETAIL 6

NTS

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20141231.104252

LD1 1-15-15

REV	DATE	BY	DESCRIPTION
1	8-20-12	KSC	ADDED WOVEN FABRIC TO 24' ROADWAY TO/FROM PARKING LOT & TO A.C. PARKING AREAS

SCALE: AS NOTED

WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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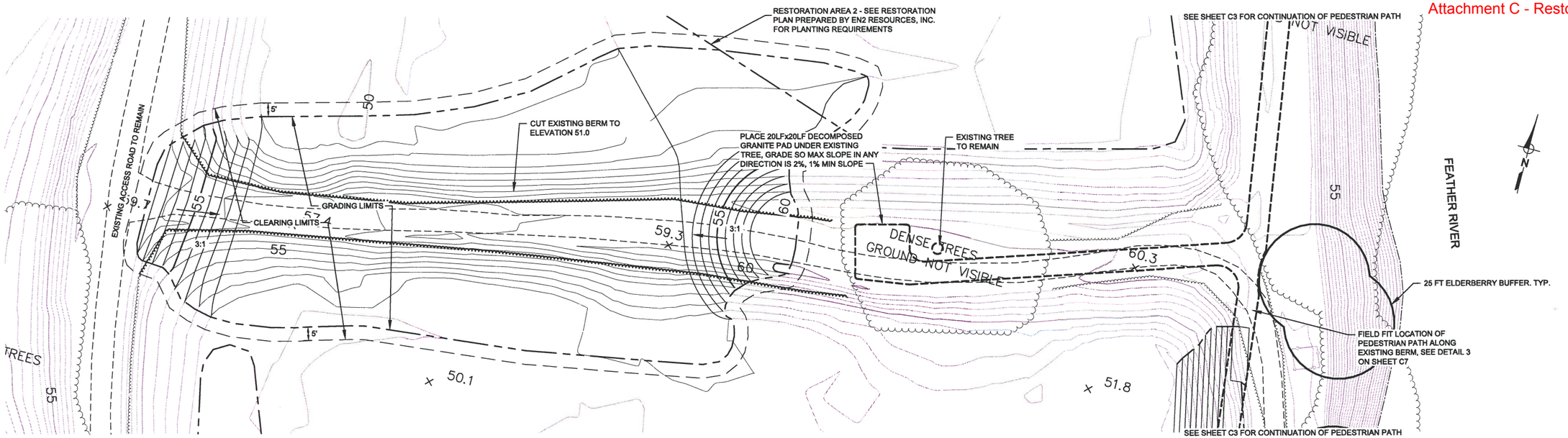
FEATHER RIVER PARKWAY - PHASE 2

BIKE & PEDESTRIAN PATH SECTIONS

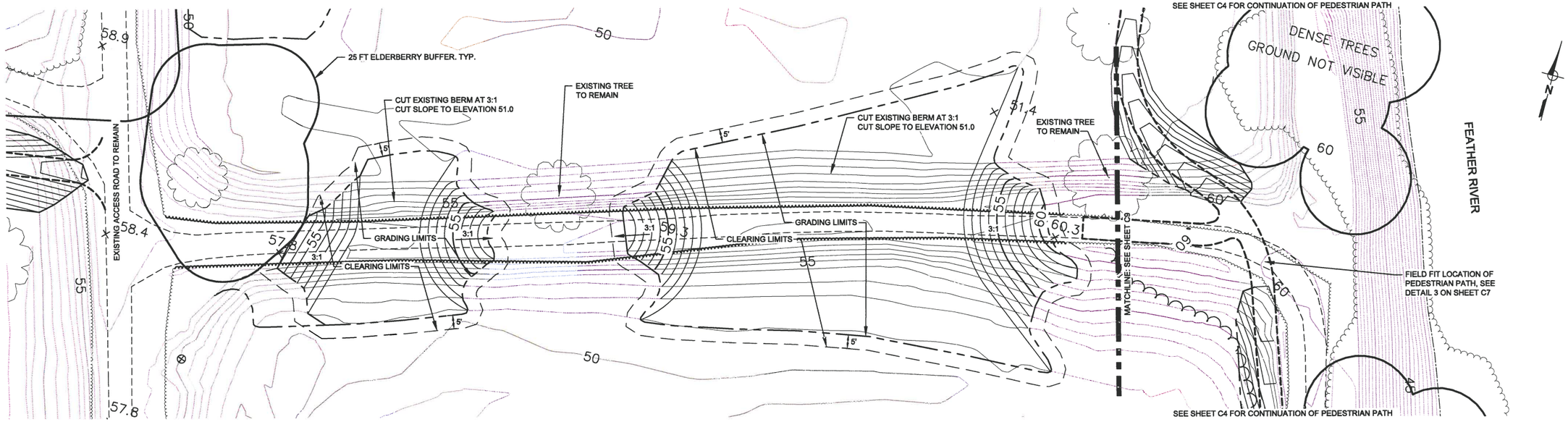
SHEET C7

9 OF 18

Attachment C - Restoration Plans



BERM "A" REMOVAL (1 / C1,C3)
SCALE: 1"=20'-0"



BERM "B" REMOVAL (2 / C1,C4)
SCALE: 1"=20'-0"

NOTES:

1. TRIM DENSE VEGETATION 5' BEYOND LIMITS OF GRADING OF BERM REMOVAL AND 3' BEYOND PEDESTRIAN TRAVEL PATH.
2. PEDESTRIAN TRAILS SHALL HAVE A 10' CLEARED WIDTH.
3. REMOVE TOP SOIL TO LIMITS (WIDTHS) NECESSARY TO CONSTRUCT PATHS PER SECTIONS 1 ,2, & 3 ON SHEET C7.
4. ELDERBERRY LIMITS SHOWN INCLUDE A 25 FOOT BUFFER. PATHS SHOWN ADJACENT TO ELDERBERRY LIMITS SHALL BE FINALIZED IN THE FIELD WITH A BIOLOGIST PRESENT. ALL ELDERBERRIES SHALL BE PRESERVED. NO CUTTING OR CLEARING OF ELDERBERRIES SHALL BE ALLOWED.

LD1 1-15-15

Z:\PROJECT FILES\YUBA-002 PARKWAY PHASE II\DWG\CD_WILLOW ISLAND PHASE 2-C SHEETS.DWG

20150106.115352

REV	DATE	BY	DESCRIPTION

SCALE: 1:20

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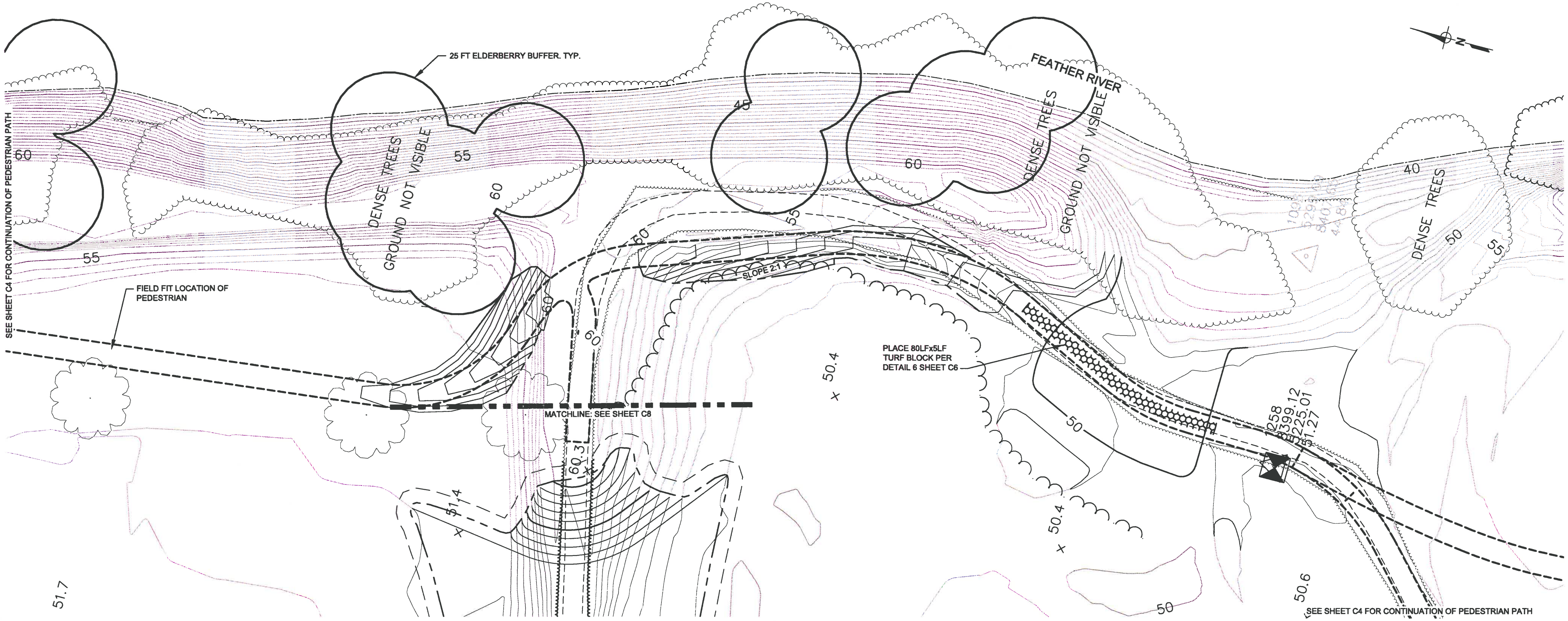
1-12-15

FEATHER RIVER PARKWAY - PHASE 2

BERM REMOVAL GRADING PLAN

SHEET C8

10 OF 18



TRAIL GRADING PLAN 1 C1,C4
SCALE: 1"=20'-0"

NOTES:

1. TRIM DENSE VEGETATION 5' BEYOND LIMITS OF GRADING OF BERM REMOVAL AND 3' BEYOND PEDESTRIAN TRAVEL PATH.
2. PEDESTRIAN TRAILS SHALL HAVE A 10' CLEARED WIDTH.
3. REMOVE TOP SOIL TO LIMITS (WIDTHS) NECESSARY TO CONSTRUCT PATHS PER SECTIONS 1 ,2, & 3 ON SHEET C7.
4. ELDERBERRY LIMITS SHOWN INCLUDE A 25 FOOT BUFFER. PATHS SHOWN ADJACENT TO ELDERBERRY LIMITS SHALL BE FINALIZED IN THE FIELD WITH A BIOLOGIST PRESENT. ALL ELDERBERRIES SHALL BE PRESERVED. NO CUTTING OR CLEARING OF ELDERBERRIES SHALL BE ALLOWED.

ENVIRONMENTAL LEGEND

EXISTING ELDERBERRY BUFFER AREAS

NOTE

SEE SHEET C1 FOR ALL SITE FURNISHINGS

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20150106.115352

LD 1 1-15-15

REV	DATE	BY	DESCRIPTION

SCALE: 1:20

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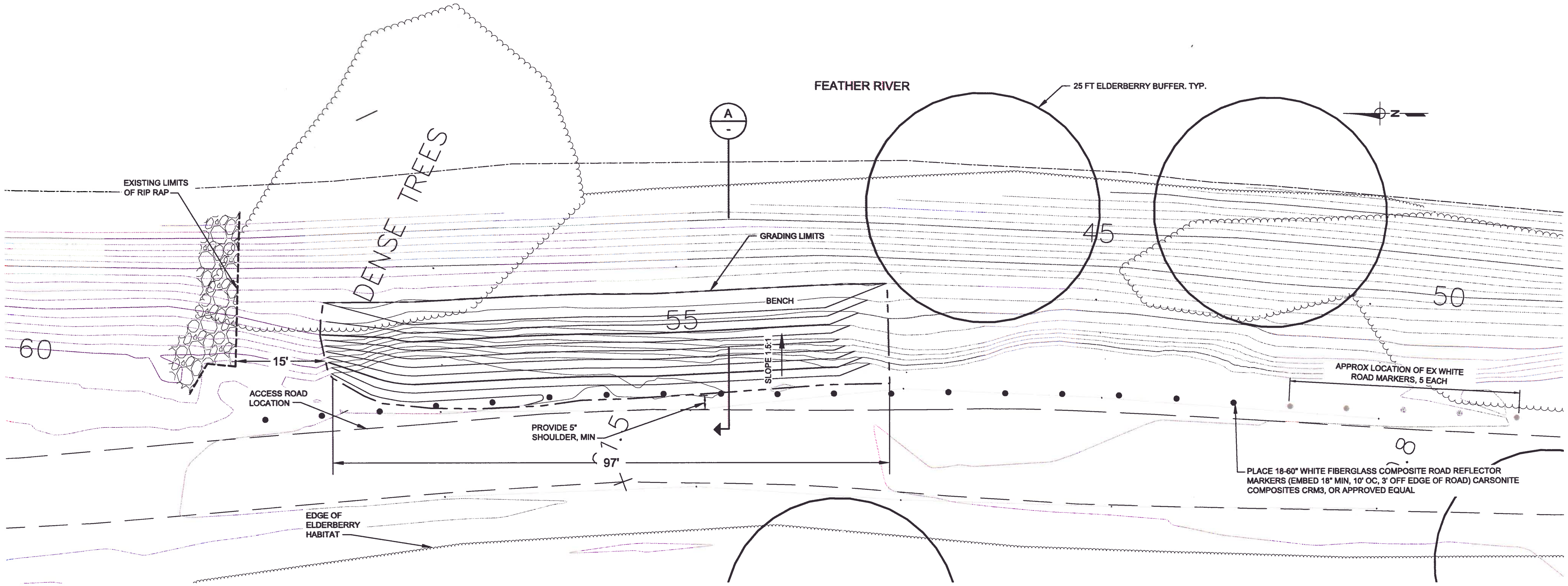
1-12-15

FEATHER RIVER PARKWAY - PHASE 2

PEDESTRIAN PATH GRADING PLAN

SHEET C9

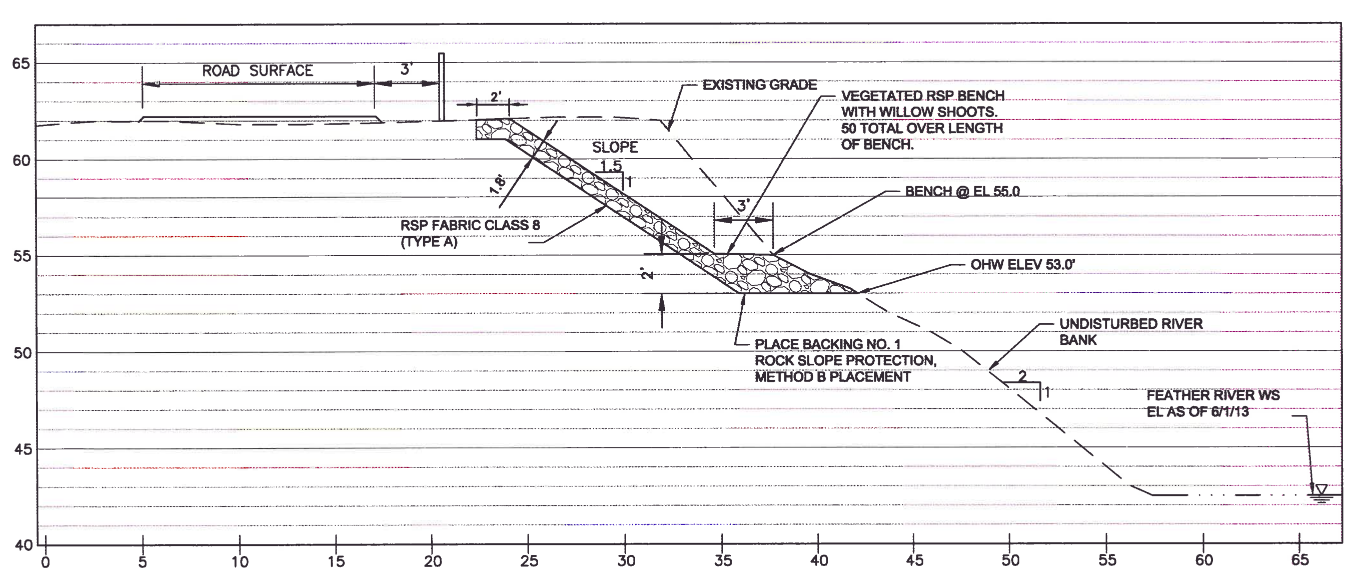


ROCK SLOPE PROTECTION PLAN 1 C1,C4

SCALE: 1"=10'-0"

ENVIRONMENTAL LEGEND

EXISTING ELDERBERRY BUFFER AREAS



SECTION A -

SCALE: 1"=5'-0"

LD 1 1-15-15

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20150106.115352

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

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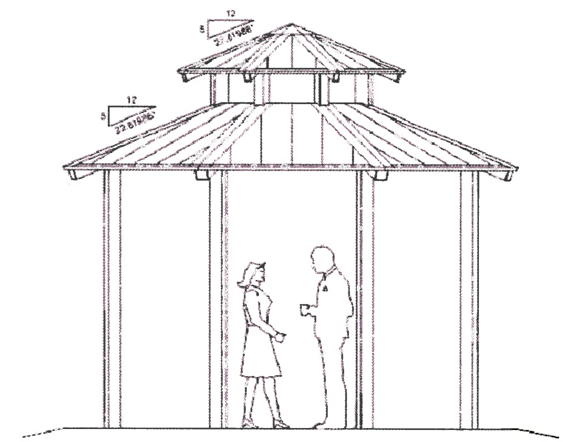
FEATHER RIVER PARKWAY - PHASE 2

BANK ROCK SLOPE PROTECTION PLAN

SHEET C10

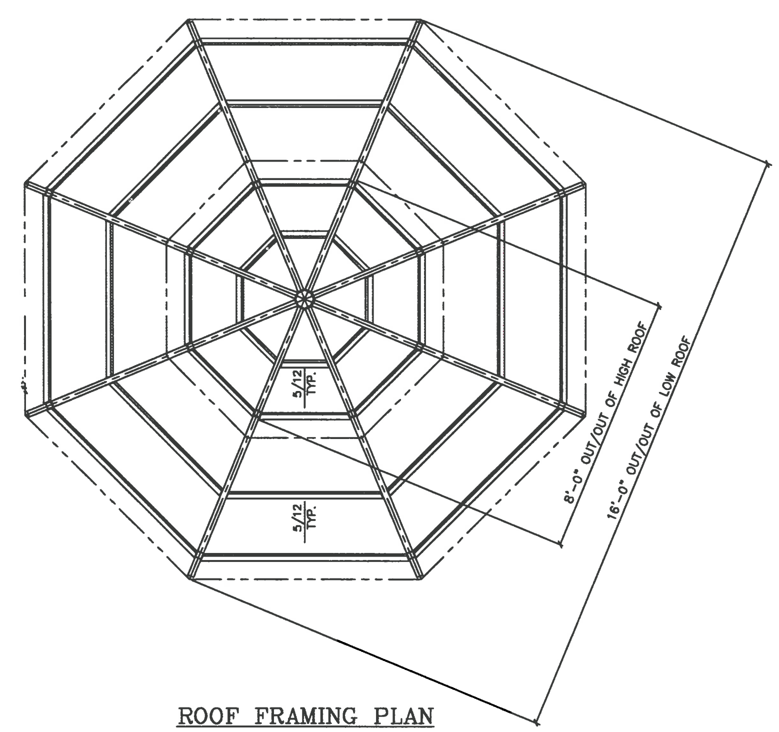
12 OF 18

NEW 16'x16' PAVILION (PHOTO OF 36'x36' PAVILION)

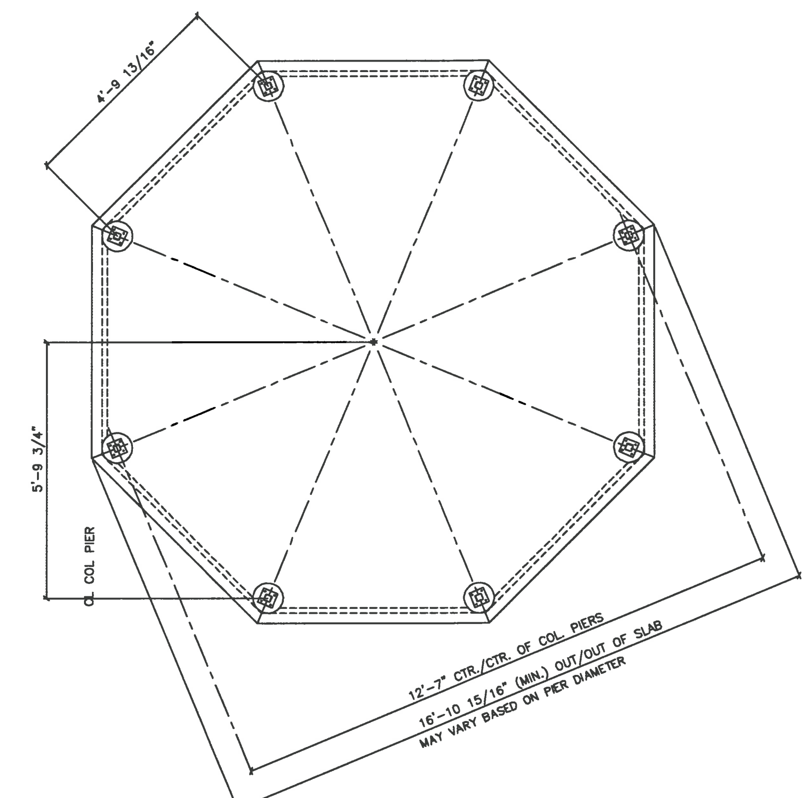


NOTES:

1. PAVILION SHALL BE GAZEBO CREATIONS 16'x16' ALL STEEL SANTA FE OCTAGON PAVILION WITH A DOUBLE ROOF OR APPROVED EQUAL.
2. METAL ROOF SHALL BE 24 GAUGE "MEGA RIB".
3. STEEL FRAME SHALL BE GIVEN A COAT OF ZINC RICH PRIMER AND THEN PAINTED WITH TWO COATS OF WEATHER RESISTANT ENAMEL PAINT TO 6 MILS. CITY OF YUBA CITY TO APPROVE COLOR OF STEEL FRAME.
4. ROOF COLOR SHALL BE EVERGREEN IN COLOR WITH KYNAR PAINT SYSTEM.
5. FINISH OF ALL EXPOSED SURFACES TO HAVE A GRAFFITI-RESISTANT SEALER APPLIED.
6. PAVILION STRUCTURE AND PIERS SHALL BE DESIGNED BY MANUFACTURER IN ACCORDANCE WITH THE 2013 CALIFORNIA BUILDING CODE (CBC). MINIMUM DESIGN PARAMETERS ARE DEFINED BELOW:
   - A SITE SPECIFIC GEOTECHNICAL REPORT IS NOT PROVIDED. ASSUMED SOIL CLASS: SANDS, SILTY SANDS, SANDY SILTS, AND SOME GRAVELS AND COBBLES. ASSUME SOIL CLASS SM PER CBC TABLE 1610.1.
   - WIND LOADS SHALL BE BASED ON CATEGORY C AND WINDS SPEEDS OF 85 MPH.
   - WATER FLOW VELOCITY OF 4.58 FT/S BASED ON 100-YR STORM EVENT
   - 29 FEET OF SUBMERGENCE BASED ON 100-YR STORM EVENT AND FINISH GRADE ELEVATION OF PAVILION SLAB.
7. SEE STRUCTURAL SHEET S1 FOR PAVILION SLAB DETAIL.
8. CONTRACTOR TO OBTAIN BUILDING PERMIT FOR PAVILION.



ROOF FRAMING PLAN



FOUNDATION PLAN

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20141121.160833

LD 1 1-15-15

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

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FEATHER RIVER PARKWAY - PHASE 2

PAVILION PLAN & SECTIONS

SHEET C11

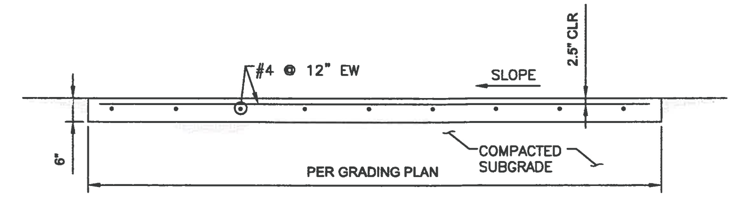
13 OF 18

Attachment C - Restoration Plans

EXAMPLE 8' x16' PRECAST CONCRETE VAULT TOILET

NOTES:

1. CONTRACTOR TO PROVIDE SUBMITTAL ON PRECAST CONCRETE VAULT TOILET. SIZE IS 8'X16' AND MUST INCLUDE STORAGE FOR CLEANING SUPPLIES AND EXTERIOR ACCESS CLEANOUTS TO VAULT.
2. STORAGE FOR CLEANING SUPPLIES TO BE PROVIDED IN BUILDING. IF PRECAST CONCRETE VAULT TOILET MODEL DOES NOT INCLUDE STORAGE FOR CLEANING SUPPLIES: A SEPARATE PRE-CAST CONCRETE STORAGE BOX WITH METAL LOCKING ACCESS DOOR IS TO BE INSTALLED NORTH OF THE BATHROOM.

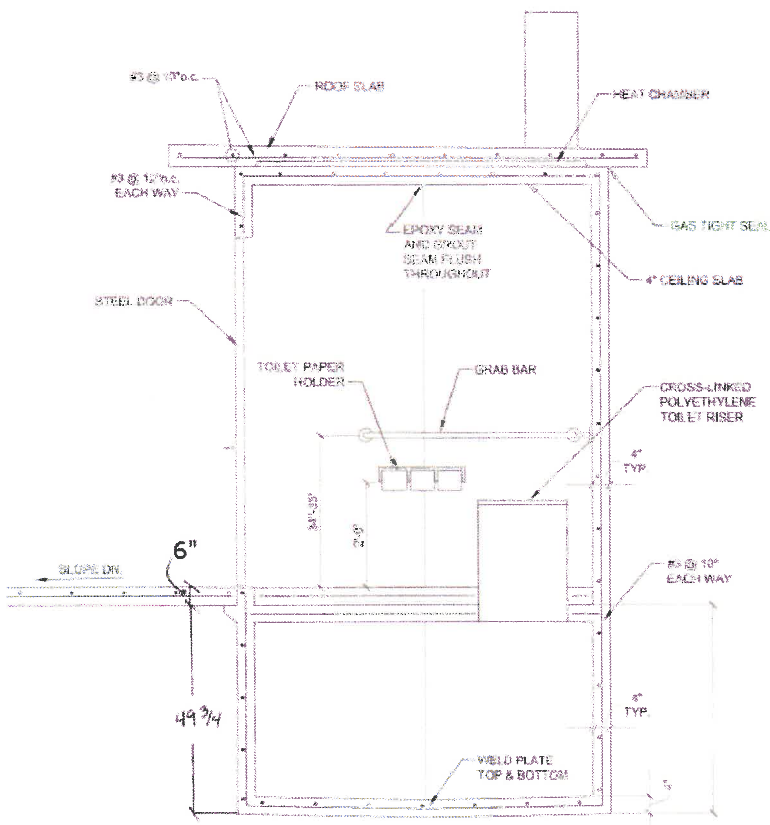


CONCRETE WALKWAY

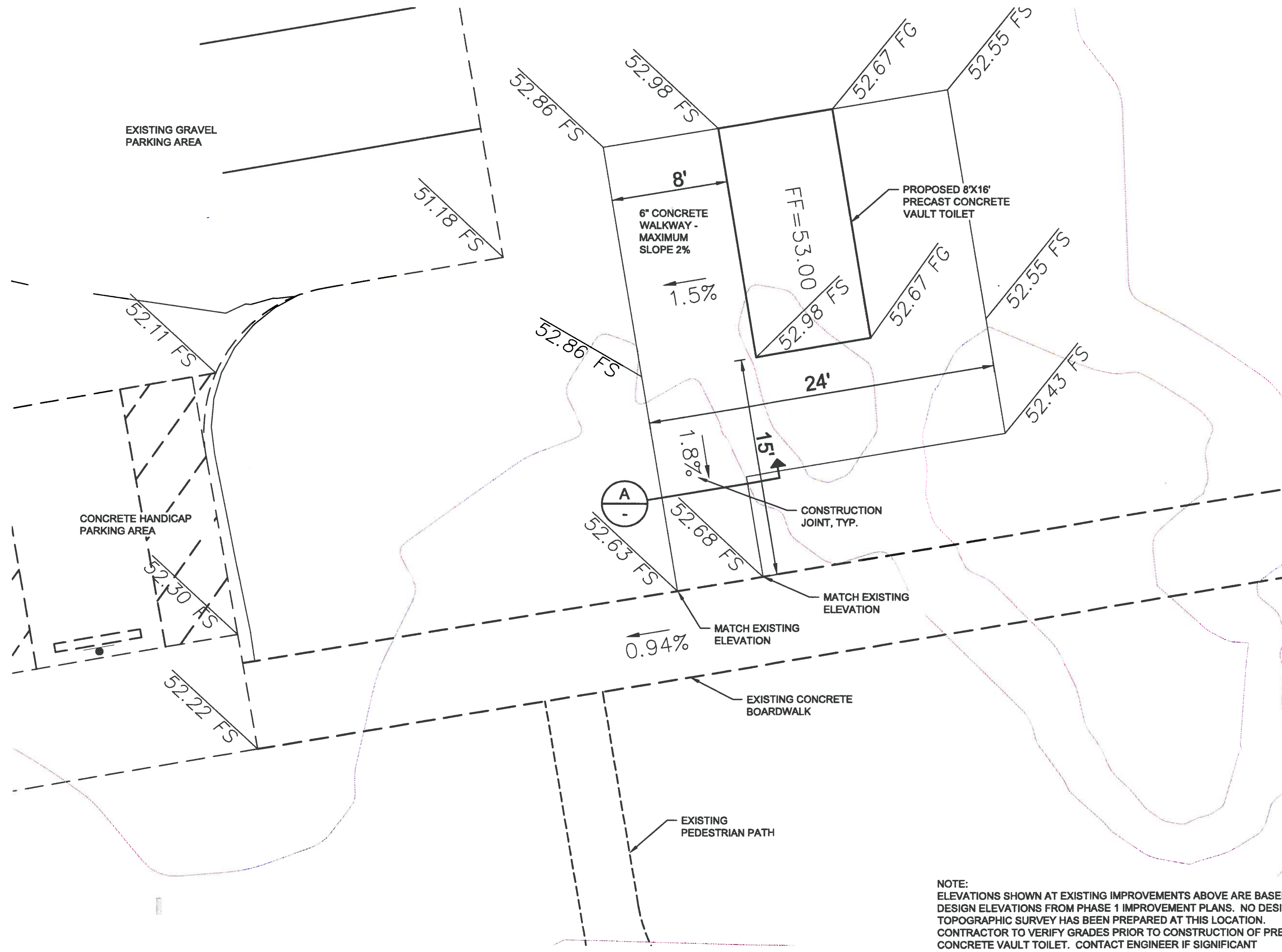
DETAIL A

NTS

NOTE: PLACE CONSTRUCTION JOINT MIDSPAN, EACH DIRECTION



EXAMPLE PRECAST CONCRETE VAULT TOILET CROSS SECTION



CONCRETE VAULT TOILET SITE/GRADING PLAN

SCALE: 1" = 5'

NOTE:
ELEVATIONS SHOWN AT EXISTING IMPROVEMENTS ABOVE ARE BASED ON DESIGN ELEVATIONS FROM PHASE 1 IMPROVEMENT PLANS. NO DESIGN TOPOGRAPHIC SURVEY HAS BEEN PREPARED AT THIS LOCATION. CONTRACTOR TO VERIFY GRADES PRIOR TO CONSTRUCTION OF PRECAST CONCRETE VAULT TOILET. CONTACT ENGINEER IF SIGNIFICANT DIFFERENCE THAN GRADES SHOWN ABOVE.

LD 1 1-15-15

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20141121.160833

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

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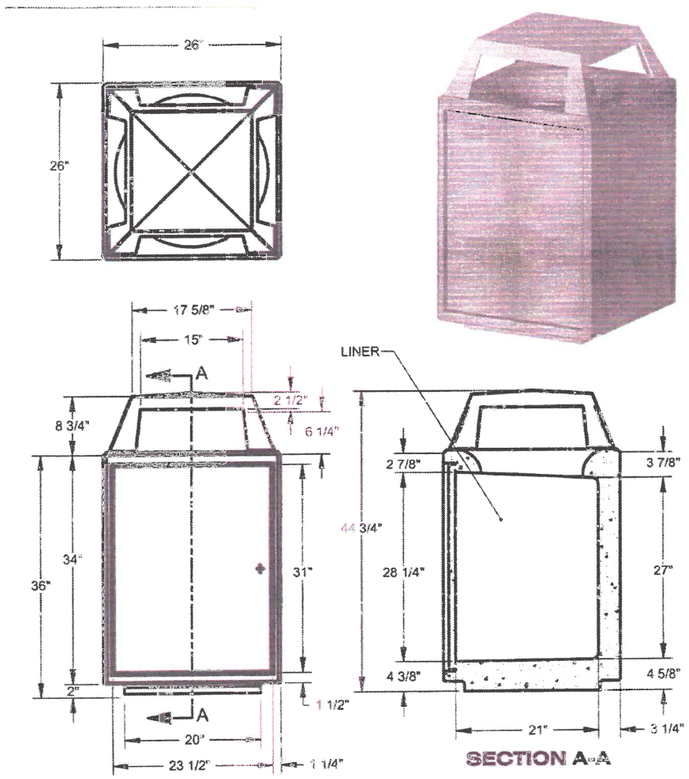
FEATHER RIVER PARKWAY - PHASE 2

PRECAST CONCRETE VAULT TOILET PLAN & SECTIONS

SHEET C12

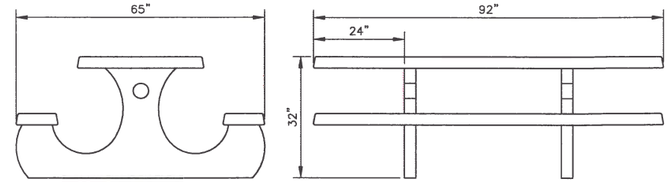
14 OF 18



TRASH RECEPTACLE NOTES:

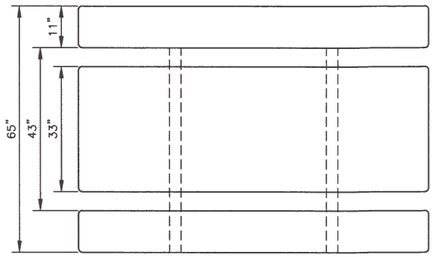
1. TRASH RECEPTACLES SHALL BE US CONCRETE PRECAST GROUP. MODEL–TR 130 WITH PLASTIC OR METAL DOOR AND TOP.
2. TAN IN COLOR FOR SURFACES AND HARDWARE.

TRASH RECEPTACLE
DETAIL 1/–
NTS



PICNIC TABLE NOTES:

1. PICNIC TABLES SHALL BE OUTDOOR CREATIONS MODEL–100S, COLOR KAHLUA.
2. CONCRETE PADS FOR PICNIC TABLES SHALL BE 10'x12' MINIMUM AND 8" THICK UNLESS OTHERWISE NOTED. SEE STRUCTURAL DETAIL A/S1.
3. MINIMUM THICKNESS OF ALL AREAS TO BE 4 INCHES.
4. MINIMUM WEIGHT TO BE 2450 LBS.
5. PICNIC TABLE TOP, BENCHES, BENCH AND TABLE SUPPORTS CAST IN ONE INTEGRAL PIECE. NO ASSEMBLY REQUIRED.
6. COLORING AGENTS ARE TO BE PURE MINERAL OXIDES AND SHALL BE MIXED INTEGRALLY WITH CEMENT.
7. CONCRETE MIX DESIGN TO INCLUDE 8.5 SACKS PORTLAND CEMENT PER YARD WITHIN MAXIMUM ROCK SIZE OF ¾" REINFORCED WITH #4 AND #5 REBAR GRID. CURED CONCRETE SHALL ATTAIN MINIMUM COMPRESSIVE STRENGTH OF 7,000 P.S.I. IN 28 DAYS.
8. ALL FORMED SURFACES AND EDGES SHALL BE FULLY ROUNDED AND SMOOTH FINISHED. FINISH OF ALL EXPOSED SURFACES TO HAVE A CONCRETE GRAFFITI–RESISTANT SEALER APPLIED.

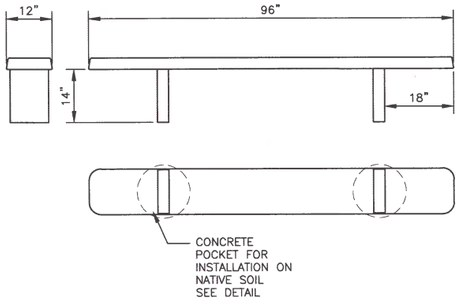


MODEL #100S

PICNIC TABLES
DETAIL 2/–
NTS

GENERAL NOTES:

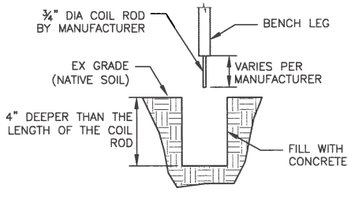
1. SITE FURNITURE SHALL BE IN–GROUND MOUNTED AS REQUIRED.
2. SITE FURNITURE COLORS TO BE APPROVED BY THE CITY OF YUBA CITY UNLESS NOTED OTHERWISE.
3. PROVIDE A TWO FOOT (2') CLEARANCE BETWEEN HARDSCAPE EDGES AND SITE FURNISHINGS.
4. SEE PLANS FOR APPROXIMATE LOCATIONS OF SITE FURNITURE. EXACT LOCATIONS TO BE DETERMINED IN THE FIELD. FINAL LOCATION SHALL BE REVIEWED AND APPROVED BY THE CITY.



BENCH
DETAIL 3/–
NTS

BENCH NOTES:

1. BENCHES SHALL BE OUTDOOR CREATIONS MODEL 403 PARK SERIES OR EQUAL WITH 3/4" DIA COIL RODS FOR BENCHES INSTALLED ON NATIVE SOIL.
2. MINIMUM THICKNESS OF ALL AREAS TO BE 4 INCHES.
3. BENCHES ARE CAST IN ONE INTEGRAL PIECE. NO ASSEMBLY REQUIRED.
4. COLORING AGENTS ARE TO BE PURE MINERAL OXIDES AND SHALL BE MIXED INTEGRALLY WITH CEMENT.
5. CONCRETE MIX DESIGN TO INCLUDE 8 SACKS PORTLAND CEMENT PER YARD WITH MAXIMYM ROCK SIZE OF ⅜" REINFORCED WITH #4 AND #5 REBAR GRID. CURED CONCRETE SHALL ATTAIN MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI.
6. ALL FORMED SURFACES AND EDGES SHALL BE FULLY ROUNDED AND SMOOTH FINISHED. FINISH OF ALL EXPOSED SURFACES TO HAVE A CONCRETE GRAFFITI–RESISTANT SEALER APPLIED.
7. MINIMUM WEIGHT TO BE 500 LBS.
8. FOR INSTALLATION ON NATIVE SOIL SEE DETAIL.



INSTALLATION DETAIL
(FOR BENCHES TO BE INSTALLED ON NATIVE SOIL)

LD 1 1-15-15

Z:\PROJECT FILES\YUBA-002 PARKWAY PHASE II\DWG\CD_WILLOW ISLAND PHASE 2-DETAILS C20-C21.DWG

20141230.173437

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED M. HAUGE
DRAWN J. CADE
CHECKED J. DOMENICHELLI

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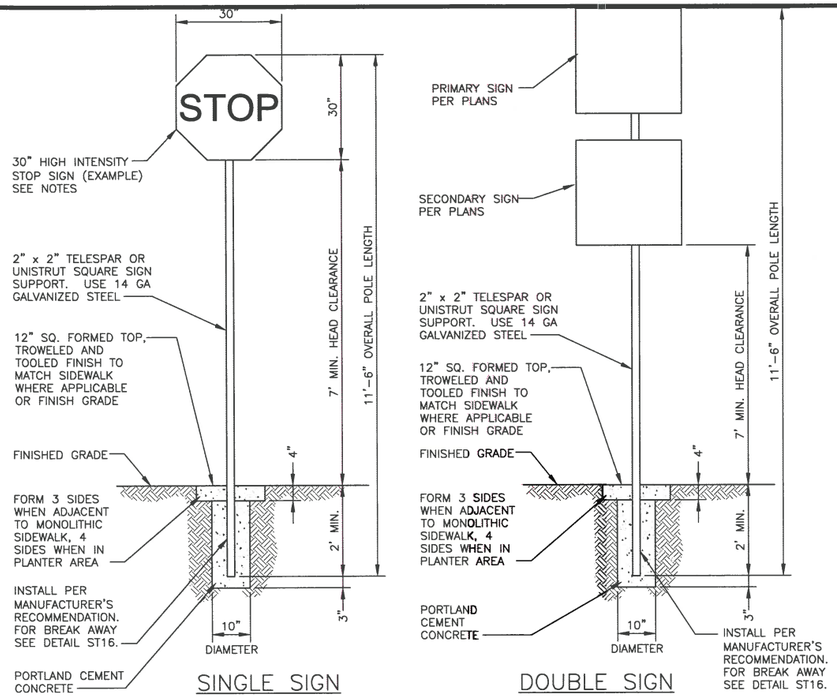
REGISTERED PROFESSIONAL ENGINEER JOSEPH M. DOMENICHELLI NO. C38526 EXP. 6/30/15 STATE OF CALIFORNIA
1-12-15

FEATHER RIVER PARKWAY - PHASE 2

SITE FURNISHINGS

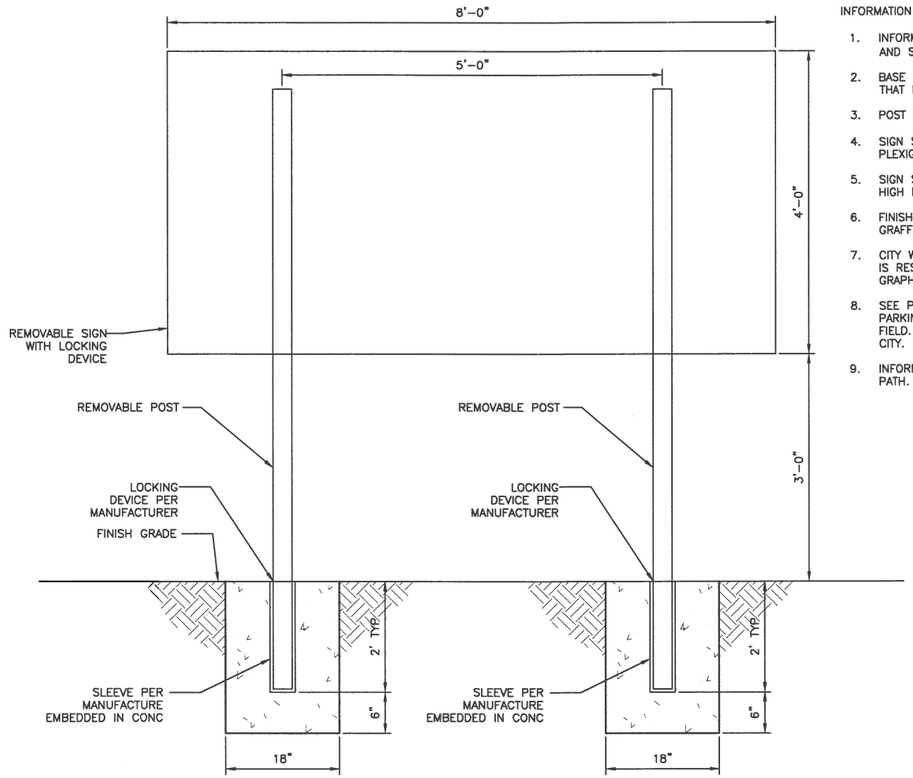
SHEET C20
15 OF 18



NOTES:

1. APPROXIMATE SIGN LOCATIONS SHOWN ON SHEET C22. CITY TRAFFIC ENGINEER TO APPROVE/DETERMINE EXACT LOCATION, SIZE AND SYMBOL.
2. MOUNTING ASSEMBLIES TO MEET THE REQUIREMENTS OF THE CITY ENGINEER.
3. ALL SIGNS SHALL MEET MUTCD REQUIREMENTS.
4. CONTRACTOR TO PROVIDE AND INSTALL SIGNS.

MODIFIED TRAFFIC SIGN
DETAIL ST17
NTS

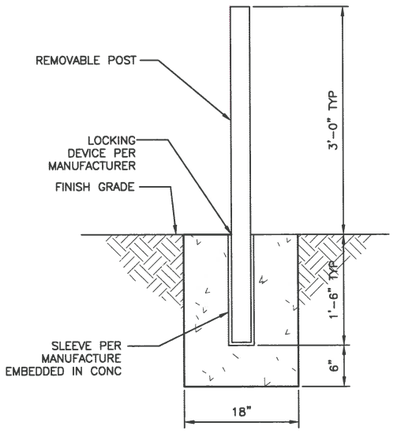


INFORMATION SIGN NOTES:

1. INFORMATION SIGN SHALL BE BY "INTERPRETIVE GRAPHICS SIGNS AND SYSTEMS" OR EQUAL.
2. BASE MOUNT SHALL BE AN ANODIZED DOUBLE PEDESTAL POST THAT IS REMOVABLE.
3. POST INSTALLATION PER DETAIL.
4. SIGN SHALL BE 48"x96" IN SIZE AND INCLUDE A PROTECTIVE PLEXIGLASS COVER.
5. SIGN SHALL HAVE DIGITALLY PRINTED IMAGES PRESSED INTO A HIGH PRESSURE LAMINATE SURFACE.
6. FINISH OF ALL EXPOSED SURFACES TO HAVE A GRAFFITI-RESISTANT SEALER APPLIED.
7. CITY WILL PROVIDE CONTENT AND LOOK FOR SIGN. CONTRACTOR IS RESPONSIBLE FOR PROVIDING SIGN WITH ASSOCIATED GRAPHICS. CONTRACTOR TO ASSUME COLOR GRAPHICS ON SIGN.
8. SEE PLANS FOR INFORMATION SIGN LOCATION AT EAST END OF PARKING LOT. EXACT LOCATION TO BE DETERMINED IN THE FIELD. FINAL LOCATION TO BE REVIEWED AND APPROVED BY THE CITY.
9. INFORMATION SIGN TO CONTAIN MILEAGE INFORMATION FOR EACH PATH.

INFORMATION SIGN
DETAIL 2
NTS

INTERPRETIVE SIGN
DETAIL 3
NTS



POST INSTALLATION

INTERPRETIVE SIGN NOTES:

1. INTERPRETIVE SIGNS SHALL BE BY "INTERPRETIVE GRAPHICS SIGNS AND SYSTEMS" OR EQUAL.
2. BASE MOUNT SHALL BE AN ANODIZED DOUBLE PEDESTAL POST THAT IS REMOVABLE.
3. POST INSTALLATION PER DETAIL.
4. SIGN SHALL BE 24"x48" IN SIZE AND INCLUDE A PROTECTIVE PLEXIGLASS COVER.
5. SIGN SHALL HAVE DIGITALLY PRINTED IMAGES PRESSED INTO A HIGH PRESSURE LAMINATE SURFACE.
6. FINISH OF ALL EXPOSED SURFACES TO HAVE A GRAFFITI-RESISTANT SEALER APPLIED.
7. TOPICS OF EACH SIGN ARE SHOWN ON SHEET C22. CONTRACTOR TO COORDINATE WITH THE CITY AND THE MANUFACTURER TO DETERMINE THE SUBJECT MATTER FOR EACH TOPIC. CONTRACTOR TO CONSIDER LONG LEAD TIME FOR SIGNS AND PROVIDE TO THE CITY A SCHEDULE OF DELIVERY OF THE SIGNS.
8. SEE PLANS FOR APPROXIMATE INTERPRETIVE SIGN LOCATIONS. EXACT LOCATIONS TO BE DETERMINED IN THE FIELD. FINAL LOCATION TO BE REVIEWED AND APPROVED BY THE CITY.

PATH DIRECTION/INFORMATION SIGN
DETAIL 1
NTS

NOTES:

1. POST SHALL BE CARSONITE DUAL SIDED TRAIL MARKER OR APPROVED EQUAL WITH THE FOLLOW SPECS:
   - COMPOSITE FIBERGLASS
   - 3.94" WIDE AND 72" IN HEIGHT
   - INSTALLED 18" INTO SOIL
   - POST SHALL BE ORDERED WITH ATTACHED ANCHOR BARB
   - BROWN IN COLOR
   - FLAT ON BOTH SIDES FOR PLACEMENT OF DECALS
2. DECALS SHALL BE 3"x3" IN SIZE, REFLECTIVE WHITE ON A BROWN BACKGROUND, AND SHALL HAVE A TOUGH WEATHER, VANDAL AND CHIP RESISTANT FINISH.
3. DECALS SHALL STICK ON POST.
4. COORDINATE WITH THE CITY WHEN ORDERING DECAL IMAGES. ASSUME 4 DECALS ON EACH SIDE OF POST (8 TOTAL PER POST).
5. SIGN LOCATIONS ARE NOT SHOWN ON PLANS. ESTIMATED QUANTITY IS 40. CONTRACTOR TO COORDINATE WITH CITY DURING CONSTRUCTION FOR EXACT LOCATIONS.
6. SIGNS TO BE INSTALLED ON BOTH PHASE 1 AND PHASE 2 PATHS.

LD 1 1-15-15

REV	DATE	BY	DESCRIPTION

SCALE: AS NOTED

WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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12-15

FEATHER RIVER PARKWAY - PHASE 2

MISCELLANEOUS DETAILS

SHEET C21
16 OF 18

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20141230.173437

DIRECTIONAL SIGNS

Ⓓ	DIRECTIONAL SIGN

TRAFFIC & SAFETY SIGN LEGEND

①	STOP	R1-1
②	SPEED LIMIT - 5 MPH	R2-1
③	CROSS TRAFFIC DOES NOT STOP	W4-4P
④	SHARE THE ROAD	W16-1P
⑤	TRAIL X-ING	W11-15 & W11-15P

INTERPRETIVE SIGN LEGEND

INTERPRETIVE SIGNS (SYMBOL)	
MARK #	TOPIC
◇1	WATER QUALITY & CONSERVATION
◇2	RESTORATION PLANTINGS
◇3	SITE HISTORY - NATIVE AMERICANS
◇4	INVASIVE PLANT & ANIMAL SPECIES
◇5	RIPARIAN WOODLANDS
◇6	COMMON BIRD SPECIES
◇7	NATIVE VEGETATION OF THE FLOODPLAIN

NOTES:

H (#) PRIMARY SIGN (ABOVE)
(#) SECONDARY SIGN (BELOW)
— SIGNS ON A SHARED POST

ALL SIGNS TO BE INSTALLED PER MODIFIED CITY TRAFFIC SIGN DETAIL ST17 ON SHEET C21.

FOR CONSTRUCTION OF BIKE AND PEDESTRIAN PATH DIRECTION/INFORMATION SIGNS SEE DETAIL 5 ON SHEET C21.

LD 1 1-15-15

Z:\PROJECT FILES\YUBA-002 PARKWAY PHASE II\DWG\CD_WILLOW ISLAND PHASE 2 - C22-C23.DWG

20141121.160845

REV	DATE	BY	DESCRIPTION

SCALE: 1:200

WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

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FEATHER RIVER PARKWAY - PHASE 2

PEDESTRIAN & BIKE PATH SIGNAGE PLAN

SHEET C22

1.0 GENERAL NOTES

1.01 STABILITY AND SHORING OF TEMPORARY CUT SLOPES ARE THE RESPONSIBILITY OF THE CONTRACTOR. DO NOT CUT SLOPES STEEPER THAN RECOMMENDED BY THE PROJECT GEOTECHNICAL ENGINEER OR CAL-OSHA.

1.02 THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL MONITOR ALL ADJACENT PROPERTY BY SURVEYING OR OTHER RECORDABLE METHODS, AND TAKE ACTION TO PREVENT ADJACENT PROPERTY OR UTILITY DAMAGE.

1.03 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

2.0 DESIGN NOTES

2.01 DESIGN CODES: ACI 318-05, 2013 CBC, ASCE 7-05.

2.02 EARTH PRESSURES (BASED ON 2013 CBC):

SOIL TYPE	SILTY SAND
LATERAL	45 PCF (EFP, ACTIVE)
	250 PCF (EFP, PASSIVE)
SOIL WEIGHT	125 PCF
ALLOWABLE BEARING	2,000 PSF

2.03 SUBGRADE: COMPACT TO 90% MINIMUM RELATIVE COMPACTION (RC) BASED ON ASTM D-1557.

2.04 DESIGN ASSUMES COMPETENT NON-EXPANSIVE SOILS BENEATH FOOTINGS.

3.0 CAST-IN-PLACE (CIP) CONCRETE

3.01 CONCRETE COMPRESSIVE STRENGTH: f'c = 3,000 PSI @ 28 DAYS

3.02 CONCRETE MIX

TYPE I/II CEMENT IN ACCORDANCE WITH ASTM C 150

MAX SLUMP	3" TO 4"
AIR CONTENT	4.5% TO 6%
WATER CONTENT	0.45 TO 0.6
MAX AGGREGATE SIZE	1"

3.03 REINFORCING STEEL fy = 60,000 PSI (REBAR)
fy = 65,000 PSI (WWF)

3.04 REINFORCING STEEL BARS TO CONFORM TO THE STANDARD SPECIFICATIONS FOR DEFORMED BILLET STEEL FOR CONCRETE REINFORCEMENT, ASTM DESIGNATION A615.

3.05 LAP SPLICE REBAR IN PER TABLE 1 THIS SHEET. STAGGER ADJACENT LAP SPLICES 24 INCHES MINIMUM.

3.06 UNLESS OTHERWISE NOTED, PROVIDE THE FOLLOWING CONCRETE COVER OVER REBAR:

CONCRETE SURFACES CAST AGAINST SOIL 3"

CONCRETE SURFACES EXPOSED TO WEATHER 2"

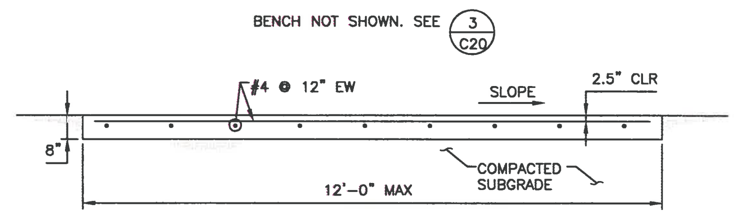
3.07 SECURELY POSITION REBAR AND DOWELS PRIOR TO PLACING CONCRETE.

3.08 PROVIDE EXPOSED CONCRETE EDGES WITH ¾" CHAMFER.

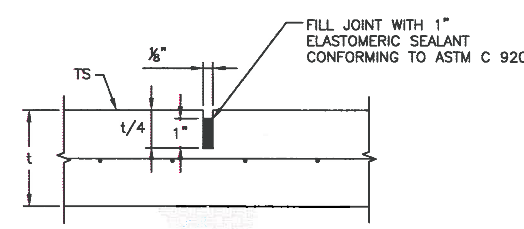
TABLE 1: TYPICAL DEVELOPMENT/LAP LENGTHS [1]

BAR SIZE	f'c = 3,000 PSI		fy = 60,000 PSI		
	TOP BARS [2]		OTHER BARS		STD HOOKS [3]
	DEV. LENGTH Ld (IN)	CLASS B LAP SPLICE (IN)	DEV. LENGTH Ld (IN)	CLASS B LAP SPLICE (IN)	DEV. LENGTH Ldh (IN)
# 3	22	29	17	22	7
# 4	29	38	22	29	8
# 5	36	47	28	36	10
# 6	43	56	33	43	12
# 7	63	82	48	62	14
# 8	72	94	55	72	16
# 9	81	105	62	81	18
# 10	91	118	70	91	20
# 11	101	131	78	101	22

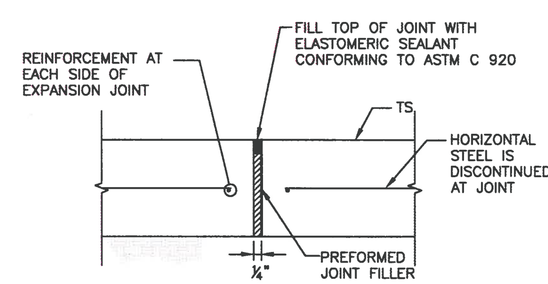
FOOTNOTES
1. BASED ON ACI 318-05 SECTIONS 12.2.2 AND 12.5.2 FOR f'c = 3,000 PSI AND fy = 60,000 PSI.
2. TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BAR PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.
3. ASSUMES 30% REDUCTION IN Ldh FOR HOOKS WITH 2.5" NOMINAL SIDE COVER (NORMAL TO PLANE OF HOOK) AND 2" MINIMUM COVER BEYOND END OF HOOK.



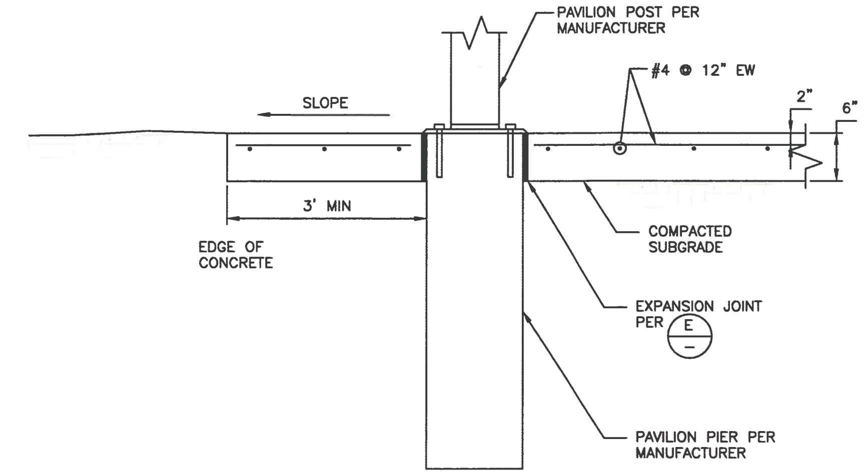
PICNIC BENCH SLAB
DETAIL A
NTS



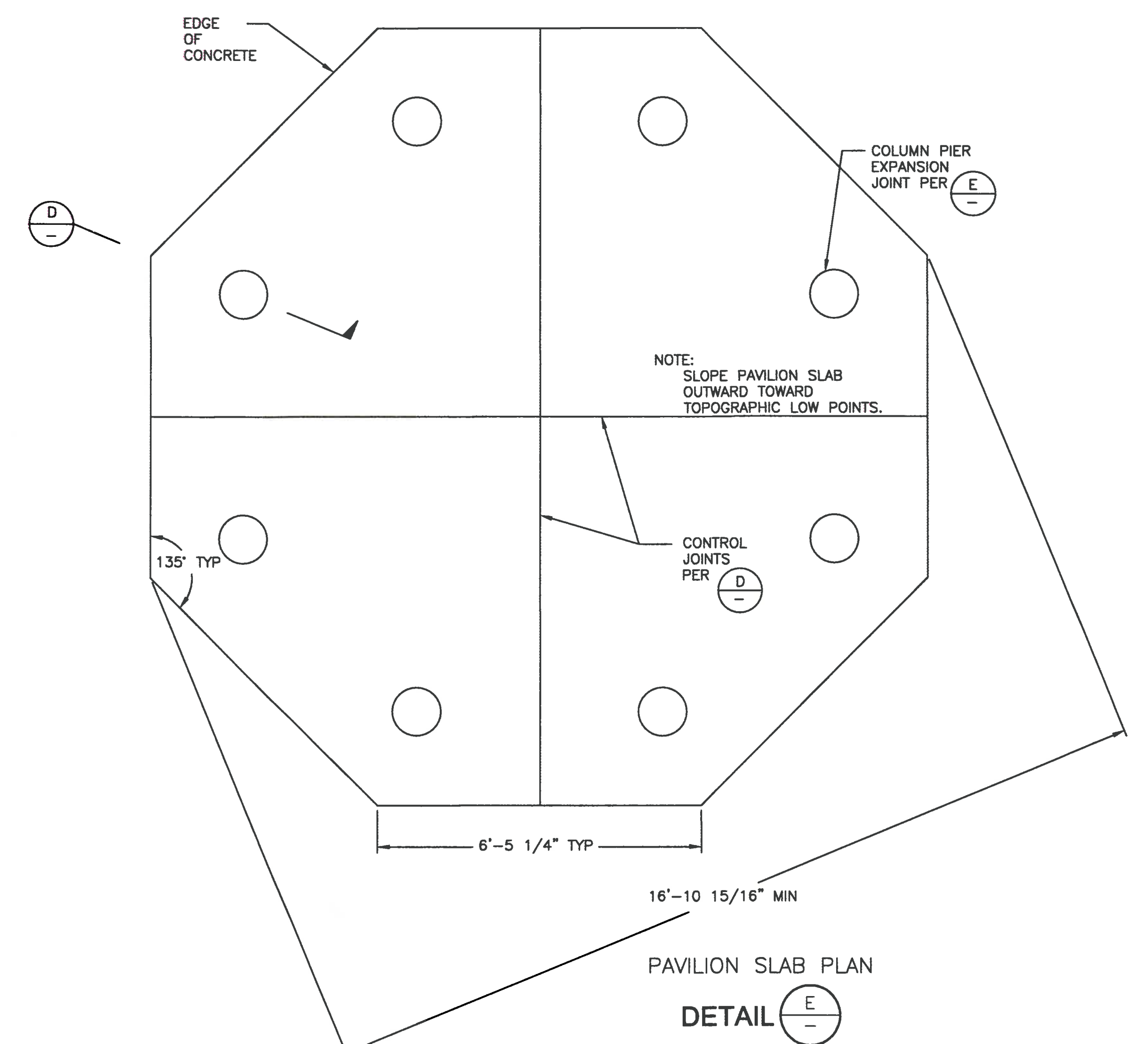
TYPICAL CONTROL JOINT
DETAIL B
NTS



TYPICAL EXPANSION JOINT
DETAIL C
NTS



PAVILION SLAB AT PIER
DETAIL D
NTS



PAVILION SLAB PLAN
DETAIL E
NTS

LD 1 1-15-15

REV	DATE	BY	DESCRIPTION

SCALE:

WARNING
0 1/2 1
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1-12-15

FEATHER RIVER PARKWAY - PHASE 2
CONCRETE SLAB AND REINFORCEMENT NOTES AND DETAILS

SHEET S1
18 OF 18

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20141121.085950

Levee District No. 1 of Sutter County
Endorsement Conditions

Levee District No. 1 of Sutter County (LD1) has the following conditions to be included on the Central Valley Flood Protection Board Encroachment Permit for the Feather River Parkway – Phase 2 Project. The conditions are as follows:

1. All improvements shall meet or exceed Central Valley Flood Protection Board Title 23, Department of Water Resources, DWR Urban Levee Design Criteria, FEMA, **Levee District No. 1 of Sutter County**, and U.S Army Corps of Engineers Standards and requirements;

2. All work endorsed by this permit shall be in accordance with the submitted drawings and specifications referred to as "Feather River Parkway – Phase 2" dated January 2015 and accepted by Levee District No. 1 of Sutter County on January 15, 2015, except as modified by special permit conditions herein. No further work, other than endorsed by this permit, shall be done in the area without prior endorsement of **Levee District No. 1 of Sutter County**;

3. The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the **Levee District No. 1 of Sutter County**, Central Valley Flood Protection Board, and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion;

4. The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board, **Levee District No. 1 of Sutter County**, and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion;

5. The Central Valley Flood Protection Board, Department of Water Resources, and **Levee District No.1 of Sutter County** shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair;

6. The project shall not increase the 1-in-100 and/or the 1-in-200 design water surface elevation of the Feather River West Levee Project along the west bank of the Feather River as documented in the Technical Memorandum titled "Design Water Surface Profiles for the Feather River West Levee Project Addendum #2" dated December 27, 2013 for Sutter Butte Flood Control Agency (SBFCA) prepared by Peterson and Brustand, Inc. (PBI);

7. A copy of operation and maintenance manual for the Feather River Parkway Project shall be provided to **Levee District No. 1 of Sutter County** upon completion of the work. The O&M manual shall include provisions for annual inspection which meet or exceed the CVFPB, DWR, USACE, and **Levee District No. 1 of Sutter County** standards. The results of the annual inspection shall be provided to **Levee District No. 1 of Sutter County** prior to November 1 each year;

8. The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense;

9. The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation and maintenance of the flood control project to interfere, the permittee shall be required, at permittee's sole cost and expense, to modify or remove the permitted encroachment(s);

10. If the project or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project, at the permittee's or successor's sole cost and expense;

11. A set of As-Built Mylar plans and specifications shall be provided to **Levee District No. 1 of Sutter County** upon completion of the work;

12. A copy of the final Central Valley Flood Protection Board Permit shall be provided to **Levee District No. 1 of Sutter County** upon approval of the permit by the CVFPB Board;

13. **Levee District No. 1 of Sutter County** shall be notified five (5) working days prior to any construction activities.

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

Revised Phase 2 Hydraulic Analysis Results (4-7-2016)

For the Feather River Parkway Phase 2 project the HEC-RAS model was updated to reflect the proposed changes to the floodplain. Figure 1 below shows the location of Phase 2 and Phase 1 of the Feather River Parkway project as it relates to the Willow Island HEC-RAS model.

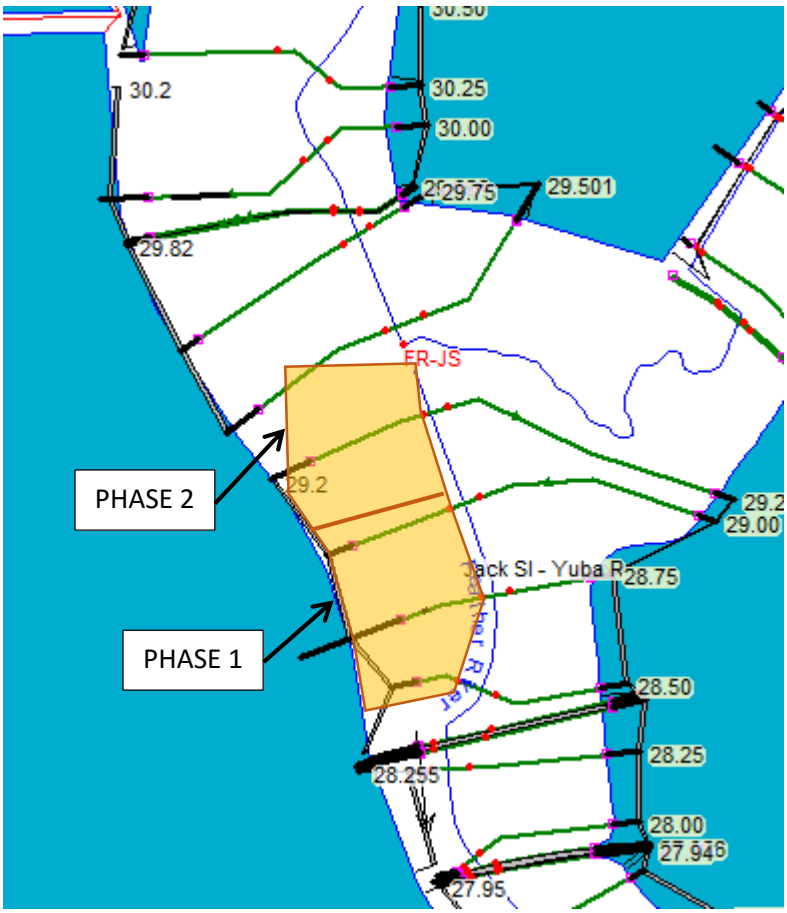

Figure 1: Plan View of Feather River Parkway HEC-RAS Model

The Feather River Parkway Phase 2 project will continue the trails and restoration efforts from the Phase 1 project. There is no work within the levee prism and no trees will be planted. Phase 2 improvements include the removal of blackberry bushes, construction of pedestrian trails, planting of native grasses and shrubs as found in the restoration plans, and construction of a new bathroom. Due to the removal of blackberries and limited plantings the manning's value in the overbanks do not change as part of the improvements. Therefore the only change to the model was the inclusion of the bathroom at cross section 28.75. Figure 2 below shows the inclusion of the bathroom in the cross section.

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

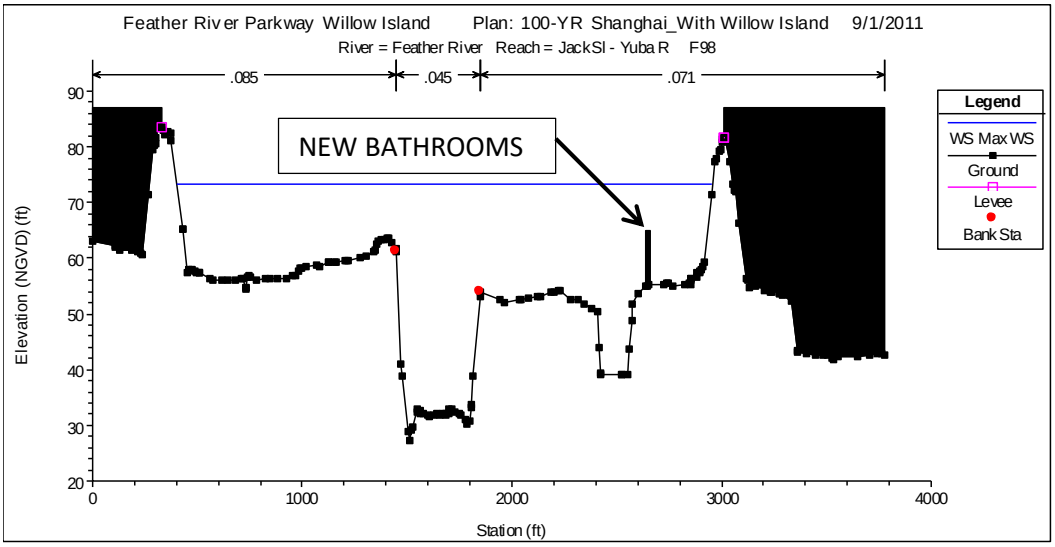

Figure 2: Updated Cross Section

The following results are based on updated design flows provided by the Army Corp (210,000 cfs) and the 200-year flow provided by the Central Valley Hydrology Study (168,900 cfs). Table 1 and Table 2 below compares the pre-phase 1 conditions to the proposed conditions (after construction of Phase 2). The maximum change to the water surface elevation in the Feather River is 0.02 feet. This occurs from a combination of the previously constructed phase 1 improvements and the proposed phase 2 improvements. As modeled, the phase 2 improvements cause a maximum increase of 0.01 feet over the modeled phase 1 improvement water surface elevations.

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

Table 1: Pre-Phase 1 Conditions to Proposed Conditions Water Surface Elevation

Station	Pre-Phase 1 WSEL (NGVD29) (Army)	Pre-Phase 1 WSEL (NGVD29) (200YR)	Proposed Phase 2 WSEL (NGVD29) (Army)	Proposed Phase 2 WSEL (NGVD29) (200YR)	Maximum WSEL Difference
29.501	77.19	76.53	77.20	76.54	0.01
29.25	77.05	76.44	77.06	76.45	0.01
29	76.85	76.29	76.86	76.31	0.02
28.75	76.46	76.03	76.45	76.03	-0.01
28.5	76.21	75.87	76.21	75.87	0

Table 2: Pre-Phase 1 Conditions to Proposed Conditions Velocity

Station	Pre-Phase 1 Vel. (NGVD29) (Army)	Pre-Phase 1 Vel. (NGVD29) (200YR)	Proposed Vel. (NGVD29) (Army)	Proposed Vel. (NGVD29) (200YR)	Maximum Vel. Difference
29.501	4.21	3.49	4.21	3.49	0
29.25	5.62	4.64	5.62	4.63	-0.01
29	5.22	4.29	5.18	4.26	-0.04
28.75	6.04	4.95	6.12	5.01	0.06
28.5	5.27	4.29	5.28	4.29	0.01